This man went from IT zero to IS hero. You can, too. Managing, page 65

Steve Jobs claims he isn't interested, but pressure is mounting to make him Apple's chairman. All should be revealed this week at Macworld. Page 28

COMPUTERWORLD

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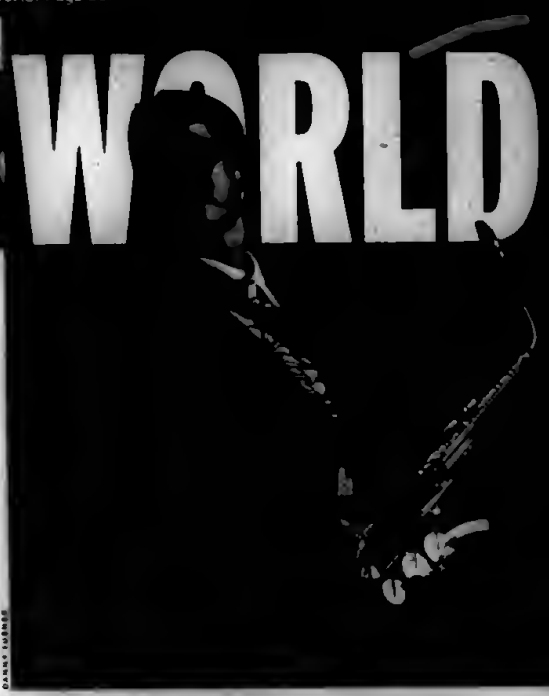

Visa boosts Java's credit line

▸ *Smart cards will redefine how plastic is used*

By Sharon Gaudin

IN A FEW YEARS, millions may reach for their Visa card instead of change for the tollbooth or a company security card.

In the biggest Java win to date, credit-card giant Visa International, Inc. early next year will begin replacing the magnetic strips on its cards with Java-based computer chips.

The move is expected to redefine the Visa card as Americans know it by transforming a static form of currency into a new purchasing and identification tool. Visa has called it "the ultimate personal computer."

Industry observers predict the new "smart card" will revolutionize the way people spend money.

"Java is critical. It's the fundamental building block for our success with chip cards," said Philip Yen, Visa's senior vice president for the chip platform. "Java will make it a lot easier to develop applications and get

Visa, page 16

E-commerce demands e-normous patience. That's the lesson the Web site development team at catalog retailer Spiegel, Inc. learned from more than two years of experiments. Spiegel's crew — until recently volunteers — shares what they learned from their quest to build a profitable (yes, profitable) electronic-commerce site. The Internet, page 47

James Summers, Barbara Vaughn, Randy Herple

Outsourcing can cut Web site expenses

By Mitch Wagner

HAVING SOLVED the question of whether to get up on the World Wide Web, many users have moved on to another debate: Should electronic commerce be outsourced because it is so complex, or kept in-house as a strategic effort?

The outsourcing of electronic commerce is gaining momentum. Transportation company Caliber Systems, Inc. last week signed a multimillion-dollar deal. And vendors Exodus Communications, Inc. and General Electric Information Services announced new offerings.

Users such as Caliber hope outsourcing will help them get a handle on the complicated technology and business problems of electronic commerce and the Internet. Outsourcing is seen as

Outsourcing, page 100

Microsoft stance roils users

▸ *Threat to cross-platform elicits strong disapproval*

By Carol Sliwa and Sharon Gaudin

USERS AND CORPORATE developers last week expressed a mix of reactions — from alarm to knowing shrugs — in recognition that cross-platform Java may be compromised if Microsoft Corp. persists in its refusal to support Sun Microsystems, Inc.'s Java Foundation Classes.

While some observers said they understand Microsoft's desire to protect its interests, most who spoke with *Computerworld* disapproved of Microsoft's bid

Microsoft, page 100

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SUPER CIOs

▸ *They're young, business-savvy and getting rich*

By Julia King

WHEN Bristol Hotels & Resorts went looking for a CIO last year, it didn't advertise the position or call a headhunter.

Instead, the Dallas company spent 10 months quietly trolling the tourism industry for an "entrepreneur" and "charismatic leader," said Richard Beckert, Bristol's senior vice president of administration. The company wasn't primarily looking for technical skills.

And it didn't get them. Bristol in early July hired Thomas H. Murphy, a high-energy sales and marketing executive with experience in the hotel and telecommunications businesses. At 34, Murphy epitomizes the new breed of Renaissance executive that companies are clamoring to hire as chief information officers — often with golden paychecks.

The new-wave CIOs are young, extremely business-savvy, creative and strong leaders, recruiters said. They also have an interesting life outside the office — a good sign of a

Super CIOs, page 24

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COMPAQ'S HIGH-FIBRE DIET
Upcoming Fibre Channel support to boost NT clusters. Page 2

SUPPORT IS A BROWSER AWAY
Cisco offers users Web-based management tools. Page 4

Virtual data marts
IS vendors see demand for a mart in every department. Page 8

SLIM IS IN FOR THE FALL
Vendors prepare generation of leaner, meaner laptops. Page 17

UP FRONT

Sunblock

Microsoft has said it will embrace Java, Sun's portable programming language. But its embrace will be the kind of squeeze a boa constrictor puts on its victims before it crushes the life out of them.

The strategy is a carrot-and-stick approach called J/Direct. J/Direct is a set of Windows-specific interfaces that let Java applications call Windows services directly. The carrot is the promise that Java developers can use J/Direct to do neat things with Windows if they just give up cross-platform compatibility. The stick is fear: Use J/Direct or your competitors surely will.

The message will hit developers in the wallet and should be effective at splintering the Java market. How sad for users, who once again will have their hopes of platform independence dashed. But users aren't Microsoft's problem right now. Defending the fortress is. And Microsoft really has no choice but to try to take control of Java. It can't ignore Java and cede the high ground to Sun. But it must discredit Java's cross-platform message, which is so dangerous to Windows.

Microsoft's Java embrace may be more like a death grip.

Microsoft is being quite nasty in the process. Its statements position Sun as some kind of scoundrel trying to foist a secret second operating system on users. And its withering criticism of Java's performance problems are absurd, given that Java is barely 18 months old. Remember, it took Microsoft five years to get Windows relatively stable.

But the counterpunch is effective and puts Sun in a difficult position. If it submits Java to a formal standards body, Java will die the death of a thousand meetings. If Sun retains control, Microsoft will continue to attack Java as proprietary. Sun's only comeback is to demonstrate that it can support and enhance Java in an open manner. That's a tall order against a giant competitor who wants to do just the opposite.

Paul Gillin, *Editor*
Internet: *paul_gillin@cw.com*

THE FIFTH WAVE
BY RICH TENNANT

E-mail Rich Tennant at thewave@iac.net

Compaq adds Fibre Channel to high-end Pentium servers

▸ *Technology promises faster backups, higher level of data protection*

By April Jacobs

COMPAQ COMPUTER CORP. plans to support Fibre Channel technology for high-end Pentium servers in the fourth quarter, *Computerworld* has learned. That would mean faster backups and better data protection for Windows NT clusters.

Fibre Channel, a high-speed connectivity technology, lets businesses connect servers with their attached disk arrays to back up data more quickly than with traditional SCSI-based devices.

Fibre Channel support is already common for RISC-based machines from vendors such as IBM and Sun Microsystems, Inc. But Compaq's move will bring Wintel platforms to a new level, said John Dunkle, president of Workgroup Strategic Services, Inc. in Portsmouth, N.H.

Fibre Channel technology on the Intel platform will give users:

- Secure data storage and retrieval
- Faster, better remote storage options than traditional SCSI
- Cheaper hardware option

COST BENEFIT

The ability to cluster Pentium-based NT servers is expected to come from Microsoft Corp.'s Wolfpack clustering software next year. That will drive down the cost of high-availability storage, because Pentium-based machines are less expensive than their RISC-based counterparts, Dunkle said.

"I think there are going to be many companies who buy in to this very quickly," he said.

"We're upgrading to Fibre Channel to increase the speed between servers and our storage capacity," said Sushiel Vyas, assistant vice president of the Capital Markets Technologies Division at First Union Bank in Charlotte, N.C.

"Our goal is to implement a Fibre Channel network within the next six months to segment and separate the physical nodes of our forthcoming Windows NT cluster," Vyas said. "We're going to put the cluster servers in two separate and distinct locations to safeguard in case of natural disaster."

Vyas said SCSI connections aren't fast enough for his company's financial transactions and batch processing jobs. "We need the 100M byte/sec. fast Fibre Channel connections to facilitate server-to-server communications," he said.

SECURITY SELLS

Rob Enderle, an analyst at Giga Information Group in Cambridge, Mass., said he expects larger firms to buy in to Fibre Channel because it is a secure platform for data protection.

Because Fibre Channel provides high-speed data transfer to off-site storage, less data will be lost if the system crashes, Enderle explained.

"This plays to the same [enterprise] audience that's waiting for Wolfpack," Enderle said. □

Senior editor Laura DiDio contributed to this story.

Navy mulls NC commitment

By Sharon Machlis

THE U.S. NAVY hopes to radically streamline administrative chores with network computers, according to Chief Information Officer Marvin J. Langston.

"So far, it looks pretty exciting," he said.

The Navy is conducting network computer pilot programs with all the major vendors, running groups of 20 to 50 systems to study effects on the overall network, other clients and applications.

The project's goal is to boost the number of clients per administrator from fewer than 50 now to "up in the hundreds."

Such productivity gains have been achieved in industry with fat clients, Langston said, but a network computer hardware configuration forces more efficiency.

The Navy expects to decide on whether to make major network computer purchases within six to eight months. □

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For these and other related links, point your browser at www.computerworld.com/links/97080glbrllnks.html

- The Fibre Channel Association: www.amdahl.com/ext/CARP/FCA/FCA.html
- Fibre Channel 97 and Beyond: www.emulex.com/fc97.htm

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- AUDIO FEATURES Non-techies in charge: IS management analyst David Foote talks with Computerworld's Rich Tehn about what nontechnical managers can bring to IS. (www.computerworld.com/cbc)
- Tim Berners-Lee talks about the future of the Web, a medium he helped invent. To be posted Aug. 6. (www.computerworld.com/cbc)

Sun, NCR make Solaris/WorldMark deal

▸ Agreement could give Sun access to next-generation 64-bit chip technology

By Jaikumar Vijayan

CALL IT Sun's Trojan horse strategy.

A licensing agreement to be announced today between Sun Microsystems, Inc. and NCR Corp. could give Sun backdoor access to next-generation IA-64 chip technology being developed by Intel Corp. and Hewlett-Packard Co.

Under the agreement, Sun will license its Solaris operating system to NCR, which will offer it as an option on its WorldMark line of Intel servers.

Sun also will announce that it is making NCR's WorldMark a reference platform for future development of Solaris, *Computerworld* has learned.

"It is one of the smartest moves they could have made at this point," said an analyst briefed on the announcement.

PLANNING FOR THE FUTURE

In the short term at least, the deal does little more than give NCR users a 64-bit Unix operating system option on their Intel servers. NCR's WorldMark series is a line of scalable servers ranging from two-processor models to systems that can support hundreds of Intel processors. The availability of Solaris will let users take better advantage of the scalability.

"Getting more market presence for Solaris is obviously also a good thing" because it gives users cheaper options to Sun's Solaris servers, said Rex Hayes, a design engineer at the advanced product development group of Eastman Kodak Co. in Rochester, N.Y.

The real significance of the deal, though, lies in its long-term potential for Sun, said analysts briefed on the announcement.

ANTICIPATION

Although IA-64 technology is nearly two years away from delivery, its arrival is already being watched with great interest by systems vendors. The hybrid chip combines elements of RISC and X86 chip technologies and promises to run Windows NT and Unix applications much faster than current technologies, including Sun's UltraSPARC.

For Sun, which has studiously avoided the Wintel camp, the IA-64 architecture is widely expected to present a major technical challenge.

But by linking with NCR and using WorldMark as a reference platform, Sun will have access to the same technology as other vendors without having to go directly to Intel or abandoning its UltraSPARC chips. □

Du Pont's Hallman to update business methods

By Thomas Hoffman

CINDA A. HALLMAN, Du Pont Co.'s cost-cutting chief information officer, has been promoted to global vice president in charge of purchasing and business process modernization.

Hallman is credited with slashing $550 million from the Wilmington, Del.-based chemical giant's information systems operations and with engineering Du Pont's 10-year, $4 billion information technology outsourcing contract, which was signed in June with Computer Sciences Corp. (CSC) and Andersen Consulting.

Hallman will continue to oversee Du Pont's global IS operations and continuous business improvement. In her new role, she will take on the responsibilities of global purchasing and business process modernization.

Robert Ridout, former director of Du Pont's global information utility, replaced Hallman as CIO effective last Friday. Ridout was responsible for orchestrating Du Pont's outsourcing agreement with CSC and Andersen and will be responsible for overseeing the company's day-to-day IS activities and administering the CSC and Andersen relationships.

CHANGE IS YOUR FRIEND

Hallman said the toughest part of her new job will be to get people to accept change and modify their work habits.

"You have to build a compelling economic case" for employees to accept business process modernization, Hallman said. Once that is established, workers are more willing to change "if they can be participants" in the improvement process, she said.

"You have to build a compelling economic case" for employees to accept business process modernization.
– Cinda A. Hallman, Du Pont

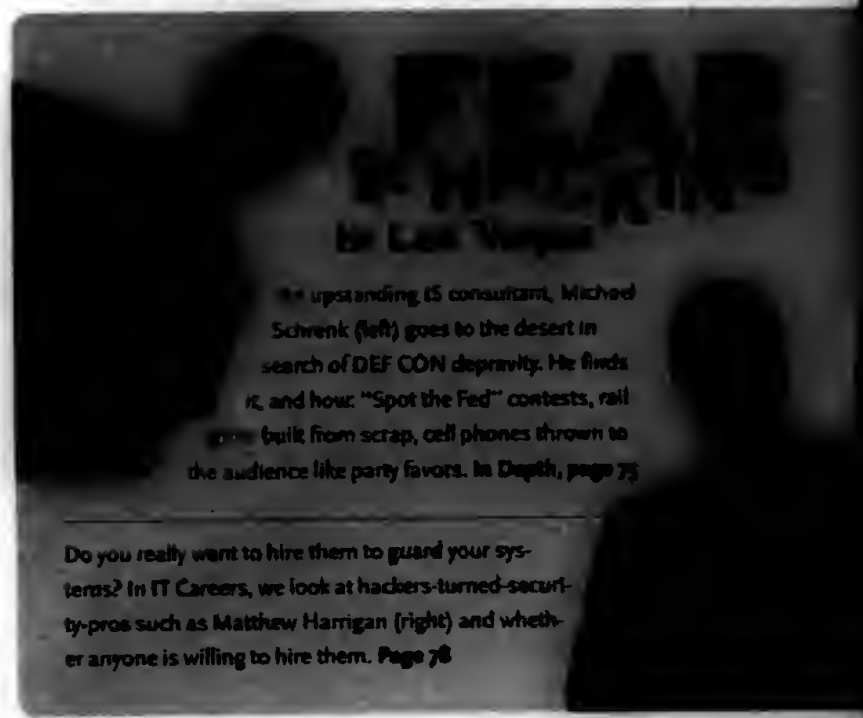
Hallman declined to estimate how much Du Pont's business process modernization program is expected to save. Despite the company's enormity — Du Pont has 80 business units around the world — the company already runs a pretty lean operation.

Du Pont "is right on top [of its operations]. They can't afford not to be to remain competitive today," said Thom Brown, managing director of research at Rutherford, Brown and Catherwood, Inc., a Philadelphia-based brokerage.

Hallman, who started her career at Du Pont's Conoco oil and gas subsidiary in 1966, said the changes she helped drive at Du Pont during her six-year tenure as CIO will help her in her new role.

But she isn't looking at the business process modernization program through rose-colored glasses.

"I fully expect that if you call me in six months, I'll have a few war stories to tell," she said. And no doubt a few victories to share as well. □


upstanding IS consultant, Michael
Schwenk (left) goes to the desert in
search of DEF CON depravity. He finds
it, and hour "Spot the Fed" contests, rail
built from scrap, cell phones thrown to
the audience like party favors. In Depth, page 75
Do you really want to hire them to guard your systems? In IT Careers, we look at hackers-turned-security-pros such as Matthew Harrigan (right) and whether anyone is willing to hire them. Page 78

NT gets defragmentation tool

By Laura DiDio

MICROSOFT CORP. last week inked a technology pact with Executive Software International, Inc. to include a manual version of Executive Software's Diskeeper defragmentation software in future releases of Windows NT.

Executive Software in Glendale, Calif., has been shipping its Diskeeper defragmentation package for the past three years.

Diskeeper consolidates free disk space on PCs and workstations and improves Windows NT Server throughput by speeding file storage.

Using Diskeeper can halve the time it takes to load software and perform database searches.

As the version in Windows NT 5.0 will be a manual one, Microsoft suggests that network administrators upgrade to the "Set It and Forget It" version of Diskeeper for automatic defragmentation of servers and workstations across the network.

Users such as Ed Young, network manager at Utah State University in Logan, said having Diskeeper included in Windows NT will potentially save him hundreds of manpower hours each year. This is because he will no longer have to load a separate copy of Diskeeper onto his NT servers and workstations. □

Omron's Barry Veltz used a virtual private network to link customers to their orders. The Enterprise Network, page 49

During the recent hurricane, an Alabama company outsourced disaster-recovery plans to stay dry. Corporate Strategies, page 41

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Cisco pushes to Web, but will users jump?

▶ *Web tools said to be best way to manage system*

By Patrick Dryden

CISCO SYSTEMS, INC. this week will begin to wean customers from their old management habits

No more issuing cryptic commands directly to Cisco routers and switches. No more running the CiscoWorks management console in the command center and via X Window System.

Now Cisco wants users to manage its devices through the Resource Manager suite of tools running on a World Wide Web server.

An operator can inventory all the Cisco devices, analyze performance data and upgrade software from any browser. Support resources will be just a hyperlink away.

Not all users are eager to make the jump to Web-based management.

"This tool won't give us much that we don't already have in CiscoWorks. But it sounds a lot more flexible," said John Ray, telecommunications engineer at the Lexis-Nexis operations center in Dayton, Ohio.

By eliminating the need for X Window sessions with the CiscoWorks platform, Resource Manager could save a lot of setup work and open access to more staff, Ray said. "As time goes by, we probably will follow their lead to the Web," he said.

Through its "quick and easy interface," Resource Manager significantly helps network support staff check software versions on all routers and switches at one time, said beta tester Diane Aufderhar, information technology planner at USAA Information Technology Co. in San Antonio.

The Resource Manager automates many of the functions in CiscoWorks, according to beta tester James Mancini, engineering manager at Virtual Networks, Inc., an integrator in Irvine, Calif.

Checking configurations and distributing new software releases "required a lot of custom scripting in CiscoWorks," Mancini said. Instead, Resource Manager can fetch the latest versions from Cisco's online library and upgrade the appropriate routers at customer sites, he said.

TOO SIMPLE?

Such automation is greatly appreciated by organizations with limited support staff, said Joe Askins, data communications director at Arizona State University in Tempe. But he is leery of Cisco's sales pitch.

"I hate to be a skeptic, but this tool's automation sounds too simple," Askins said. He said he is more comfortable having the school's engineers "go right in to the guts of the routers to do their black magic."

The majority of Cisco users still work this way, said John Morency, a principal at network consultancy The Registry, Inc. in Newton, Mass.

For them, Resource Manager "will be a major shift," Morency said. But high-level supervisors can benefit immediately, he said. "Those who supervise the techies can quickly find out what changed overnight or over the weekend," he said.

> "I hate to be a skeptic, but this tool's automation sounds too simple."
> – Joe Askins, Arizona State

"With their head on the chopping block with upper management for reliable network operation, they need a tool for an instant explanation about what went wrong and how to fix it," he said.

Resource Manager runs on a Solaris server and works with any Java-capable browser. It costs $5,995 but is free for users with Cisco service contracts. It will be included with the next version of CiscoWorks, due this month, as Cisco shifts its users from big management servers to the Web. □

Computerworld August 4, 1997 (www.competerworld.com)

Cisco pushes to Web, but will users jump?

▶ *Web tools said to be best way to manage system*

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Rebecca Roberts

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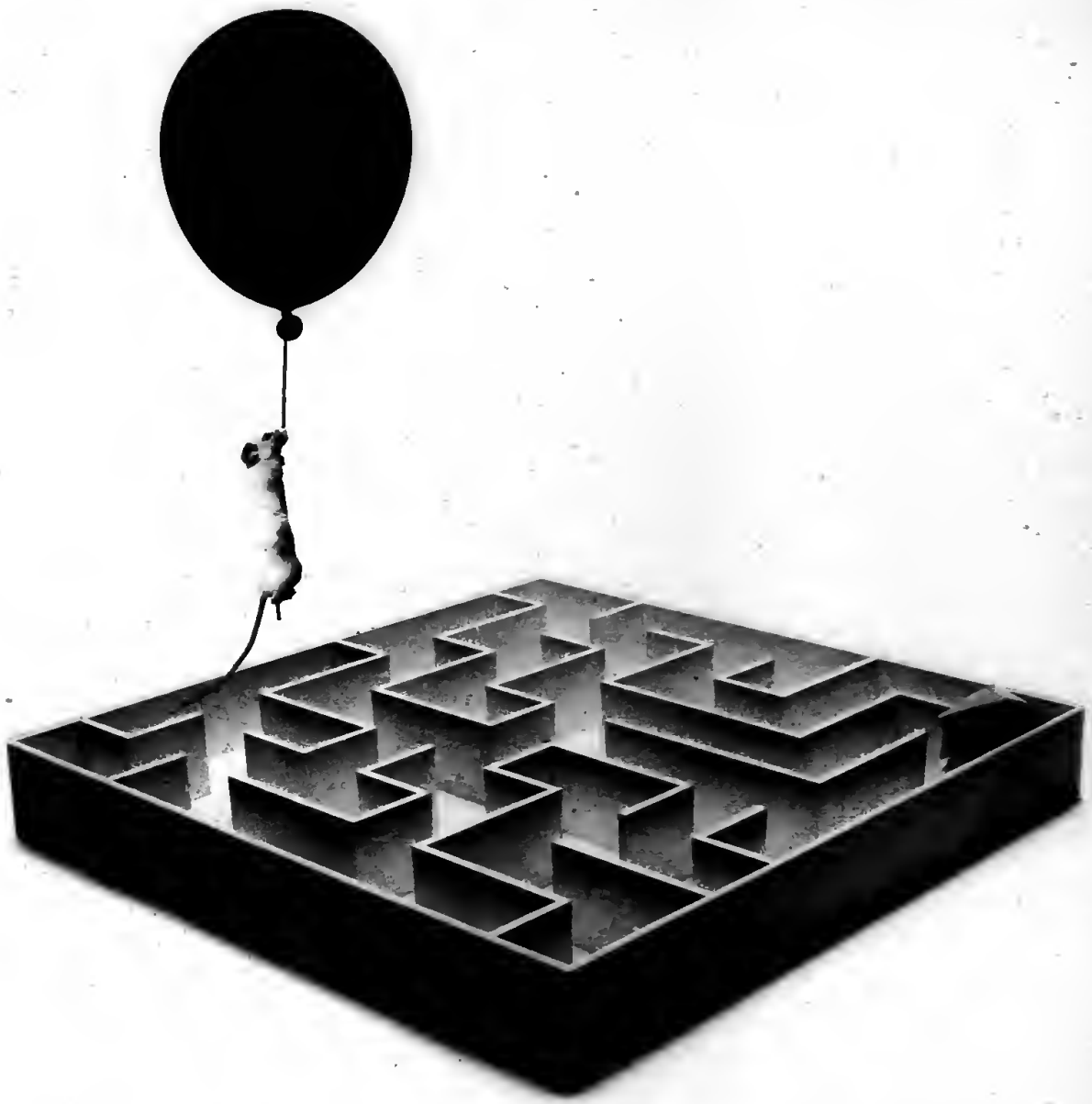

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Users laud NT Enterprise

▸ *Beta testers give high-five to cost, reliability, performance of Edition 4.0*

By Laura DiDio

SO FAR, so good.

That's the consensus of beta users testing Microsoft Corp.'s Windows NT Enterprise Edition 4.0, which is due in the third quarter.

Eight businesses, including two Fortune 500 accounts, gave the operating system a thumbs-up for its cost-effectiveness, performance and reliability.

MICROSOFT WINDOWS NT

The NT Enterprise edition will feature built-in, two-way fail-over clustering support to ensure 100% network uptime; support for 3G bytes of memory, compared with the standard 2G bytes in Windows NT 4.0; and the option to buy from one- to eight-way symmetrical multiprocessing (SMP) for greater scalability.

The current release of Windows NT Server 4.0 scales to only four processors.

"The Windows NT Enterprise beta is good stuff. We've stressed it every way imaginable for the past four months and have been hard-pressed to get it to crash," said Sid Vyas, assistant vice president at the Capital Markets Technologies division of First Union Corp. in Charlotte, N.C.

Vyas said he found the Wolfpack clustering in the NT Enterprise edition to be much better at handling wide-area traffic than Novell, Inc.'s NetWare SFT III.

COSTLY DOWNTIME

"The clustering and inherent security in NT Enterprise are crucial for us. Without it, we could be looking at $1 million in lost data and productivity each hour that our networks are down," Vyas said.

Wolfpack clustering and the NT Enterprise edition's support for eight way SMP also are the big lures for Andy Doran, MIS manager at PMP Corporate Systems Ltd. in London. "Eight-way SMP and the built-in redundancy that the clustering provides are must-haves for us. If our networks crash, business stops. It's that simple," Doran said.

An information systems manager at a top New York brokerage who requested anonymity said he has encountered only a few minor glitches involving SCSI adapters. The manager said he liked the increased support for 3G bytes of memory. "It's not clear that we'll need it immediately, but we have over 10,000 users. So it's nice to know it's there; I consider it a freebie," he said.

Dennis Martin, president of the Windows NT Rocky Mountain Users Group in Denver, which has more than 2,000 members, agreed. The featured topic at the group's June meeting was Wolfpack clustering. 500 people showed up, more than three times the normal turnout of about 150, he said.

"Obviously, Wolfpack clustering is one of the main reasons to buy NT Enterprise. Many of our Exchange Messaging Server users were especially interested because it will assure them of near-100% uptime," Martin said.

PRICE NO BIGGIE

Users said they will fight hard to get the best price deal from Microsoft. But most said they wouldn't balk at the estimated $4,000 price tag for a 25-user version of NT Enterprise. The same configuration of Windows NT 4.0 costs $1,468.

"NT Enterprise will more than pay for itself in the event of a network outage. The cost of lost data is incalculable, so we're not complaining about pricing," Doran said.

Henry Eckstein, chief information officer at York Claims Services, a nationwide claims firm in New York, agreed. "I'm going to start testing NT Enterprise. If it lives up to its billing and saves me even one hour out of the 20 hours I now spend troubleshooting the network, then I'll buy it, because my time is valuable," Eckstein said. □

Window NT Enterprise Edition 4.0 supports:

- Eight-way symmetrical multiprocessing
- Microsoft Cluster Server with automatic fail-over
- Cross-platform Win32 APIs
- Microsoft Transaction Server
- Enhanced version of Microsoft Message Queue Server
- 3G bytes of memory

& NT 5.0 plans win kudos, but users want to see it in action. Page 49

E-mail migration tools fall short of vendor promises; new offerings ahead

By Barb Cole-Gomolski

WHEN MIGRATING from a mainframe-based E-mail system to Microsoft Corp. Exchange, Capital Blue Cross knew it could buy gateways that would let users swap messages and directory information between the two systems.

But then there were the thousands of electronic-mail messages locked up in the old system. Those messages were a corporate repository of correspondence, contracts and projects too valuable to leave behind.

"It was not feasible to have users [manually] forward these E-mail messages to the new system," said Dave Gernert, technology specialist at Capital in Harrisburg, Pa., which is moving about 3,000 users from Naples, Fla.-based Fischer International, Inc.'s Tao E-mail system.

Like many sites, Capital learned that the migration tools offered by the leading messaging vendors, such as Microsoft and Lotus Development Corp., go only so far. As a result, sites may wind up running dual messaging systems during what turns out to be a longer-than-planned migration.

"E-mail migration tools [from the leading messaging vendors] have fallen short," said Mike Roszkowski, an analyst at Creative Networks, Inc., a research firm in Palo Alto, Calif.

TIPS FOR MIGRATING

- Migrate groups of users that work together at the same time
- Encourage users to weed out nonessential messaging and folders
- Consider the breadth of migration tools offered by messaging vendors
- If migration takes more than a year, consider using tools that will make it possible to keep the old and new system up and running
- Recognize that in many cases calendaring data and custom forms can't be moved easily from the old to the new system

LIST OF WOES

Users typically complain about the shortage of tools to handle the assortment of legacy E-mail systems out there. The tools that do exist can't handle old messages, calendar information and custom-built forms, Roszkowski said.

Lotus sites gave high marks to the company's tools designed to move users from IBM OfficeVision to Notes. But users at one site said that after evaluating software to move from Digital Equipment Corp.'s All-In-1 to Notes, they decided not to migrate any information from the legacy system and simply start afresh with Notes.

Another option is supplementing the migration tools provided by companies such as Lotus, Microsoft and Novell, Inc. with third-party offerings, which is what Capital did. "But it isn't cheap," said Joyce Graff, an analyst at Gartner Group, Inc. in Stamford, Conn.

> **"In the ideal world, your messaging vendor would come in ready to go with all the tools you need to migrate. But that doesn't happen."**
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Other companies have simply set limits on how much information is moved.

"We do have a utility that downloads old messages, but there's no migration plan for bulletin boards or forms," said Bob Winterton, a systems specialist at Consolidated Edison Company of New York.

The utility is moving more than 10,000 users from Fischer's EMC2 mail systems to Exchange. "We haven't been extremely helpful to our users in getting data off the legacy system," Winterton said.

"In many cases, the time and energy [involved in migrating data from a legacy mail system] is not worth the effort" to retain the legacy data, said Gregg Aamoth, manager of the applications solutions division at MicroAge Solutions, a systems integrator in Novi, Mich.

At Capital, IS purchased migration tools from third-party vendors. It turned to LinkAge Software, Inc. in Ottawa — which was bought out by Microsoft last month — for a tool to synchronize the messaging and directory pieces. CompuSven, Inc. in Naples, Fla., provided the software to migrate the legacy data.

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Roszkowski said Microsoft's buyout of LinkAge and Lotus' push to get third-party Notes migration tools shows that the vendors are paying attention to this issue. "But they don't have a lot of incentive to do a good job with these tools. These are the kinds of products that people buy once, use and throw away," he said. □

Users laud NT Enterprise

▸ *Beta testers give high-five to cost, reliability, performance of Edition 4.0*

By Laura DiDio

SO FAR, SO good.

That's the consensus of beta users testing Microsoft Corp.'s Windows NT Enterprise Edition 4.0, which is due in the third quarter.

Eight businesses, including two Fortune 500 accounts, gave the operating system a thumbs-up for its cost-effectiveness, performance and reliability.

MICROSOFT WINDOWS NT

The NT Enterprise edition will feature built-in, two-way fail-over clustering support to ensure 100% network uptime; support for 3G bytes of memory, compared with the standard 2G bytes in Windows NT 4.0; and the option to buy from one- to eight-way symmetrical multiprocessing (SMP) for greater scalability.

The current release of Windows NT Server 4.0 scales to only four processors.

"The Windows NT Enterprise beta is good stuff. We've stressed it every way imaginable for the past four months and have been hard-pressed to get it to crash," said Sid Vyas, assistant vice president at the Capital Markets Technologies division of First Union Corp. in Charlotte, N.C.

Vyas said he found the Wolfpack clustering in the NT Enterprise edition to be much better at handling wide-area traffic than Novell, Inc.'s NetWare SFT III.

COSTLY DOWNTIME

"The clustering and inherent security in NT Enterprise are crucial for us. Without it, we could be looking at $1 million in lost data and productivity each hour that our networks are down," Vyas said.

Wolfpack clustering and the NT Enterprise edition's support for eight-way SMP also are the big lures for Andy Doran, MIS manager at PMP Corporate Systems Ltd. in London. "Eight-way SMP and the built-in redundancy that the clustering provides are must-haves for us. If our networks crash, business stops. It's that simple," Doran said.

An information systems manager at a top New York brokerage who requested anonymity said he has encountered only a few minor glitches involving SCSI adapters. The manager said he liked the increased support for 3G bytes of memory. "It's not clear that we'll need it immediately, but we have over 10,000 users. So it's nice to know it's there; I consider it a freebie," he said.

Dennis Martin, president of the Windows NT Rocky Mountain Users Group in Denver, which has more than 2,000 members, agreed. The featured topic at the group's June meeting was Wolfpack clustering; 500 people showed up, more than three times the normal turnout of about 150, he said.

"Obviously, Wolfpack clustering is one of the main reasons to buy NT Enterprise. Many of our Exchange Messaging Server users were especially interested because it will assure them of near-100% uptime," Martin said.

PRICE NO BIGGIE

Users said they will fight hard to get the best price deal from Microsoft. But most said they wouldn't balk at the estimated $4,000 price tag for a 25-user version of NT Enterprise. The same configuration of Windows NT 4.0 costs $1,468.

"NT Enterprise will more than pay for itself in the event of a network outage. The cost of lost data is incalculable, so we're not complaining about pricing," Doran said.

Henry Eckstein, chief information officer at York Claims Services, a nationwide claims firm in New York, agreed. "I'm going to start testing NT Enterprise. If it lives up to its billing and saves me even one hour out of the 20 hours I now spend troubleshooting the network, then I'll buy it, because my time is valuable," Eckstein said. □

Window NT Enterprise Edition 4.0 supports:

- Eight-way symmetrical multiprocessing
- Microsoft Cluster Server with automatic fail-over
- Cross-platform Win32 APIs
- Microsoft Transaction Server
- Enhanced version of Microsoft Message Queue Server
- 3G bytes of memory

& **NT 5.0 plans win kudos, but users want to see it in action. Page 49**

E-mail migration tools fall short of vendor promises; new offerings ahead

By Barb Cole-Gomolski

WHEN MIGRATING from a mainframe-based E-mail system to Microsoft Corp. Exchange, Capital Blue Cross knew it could buy gateways that would let users swap messages and directory information between the two systems.

But then there were the thousands of electronic-mail messages locked up in the old system. Those messages were a corporate repository of correspondence, contracts and projects too valuable to leave behind.

"It was not feasible to have users [manually] forward these E-mail messages to the new system," said Dave Gernert, technology specialist at Capital in Harrisburg, Pa., which is moving about 3,000 users from Naples, Fla.-based Fischer International, Inc.'s Tao E-mail system.

Like many sites, Capital learned that the migration tools offered by the leading messaging vendors, such as Microsoft and Lotus Development Corp., go only so far. As a result, sites may wind up running dual messaging systems during what turns out to be a longer-than-planned migration.

"E-mail migration tools [from the leading messaging vendors] have fallen short," said Mike Roszkowski, an analyst at Creative Networks, Inc., a research firm in Palo Alto, Calif.

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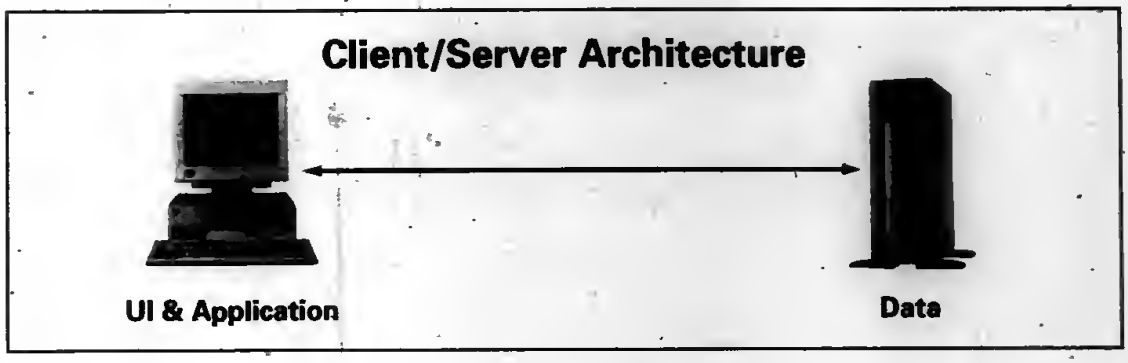
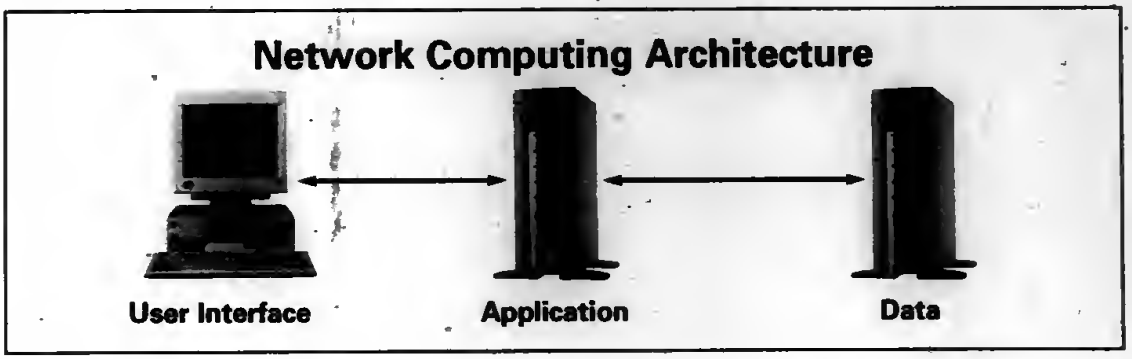
TIPS FOR MIGRATING

Get your Enterprise Applications off the Desktop and onto a Server where they belong.

Client/Server architecture places the user interface and application software on the desktop, and the data on the server computer. Unfortunately, managing enterprise applications on desktop PCs is an administrative nightmare.



Moving your applications to servers is the essence of Network Computing Architecture. Server-based applications can dramatically lower administrative costs while improving application performance, reliability and security.



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Going 'virtual' eases pain of managing multiple data marts

▸ *Single database can fight systems headaches*

By Craig Stedman

DATA WAREHOUSE managers are turning to their own form of virtual reality to reduce the pain of running the multiple data marts demanded by the business units they serve.

Data marts, which store subsets of information about product sales and other topics, may speed up the process of getting critical decision-support data to end users. But the proliferation of data marts can be a hassle for the warehousing staffs that have to keep everything in sync.

Seeking a way out of that trap, some companies are building "virtual data marts" that share a database but are presented to users as separate entities.

The virtual approach "is a lot easier than having to maintain multiple separate universes," said Don Stoller, director of decision services at Owens & Minor, Inc. in Glen Allen, Va. The $3 billion distributor of medical and surgical supplies is combining a series of data marts within a single Oracle Corp. database.

BRADFIELD MACDOUGALL

Owens & Minor's plan is to piece together data marts "almost as building blocks to form an enterprise data warehouse."
– Don Stoller, director of decision services

Owens & Minor couldn't afford to take the time needed to develop a full data warehouse all at once. But Stoller said building separate data marts would make it harder to guarantee that users could run queries that go across all of them.

The data marts, covering functions such as sales, inventory and accounts receivable, will be stored in their own tables within the Oracle database, Stoller said. End users then will be able to see different views of the information through their desktop query tools.

Hoechst Marion Roussel, Inc., a pharmaceuticals maker in Kansas City, Mo., is following a similar path with its Oracle-based data warehouse. Everything is being stored in one database, "but it looks just like they were separate data marts" to users, said Coleman Darby, project manager for the company's data warehouse architecture.

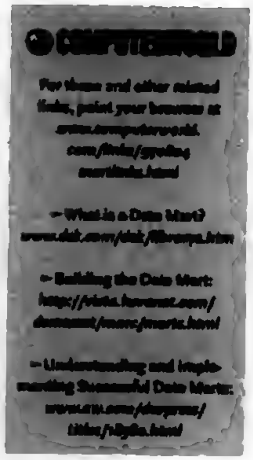
Data marts stored on departmental servers hold great appeal for business units that don't want to have to contend for access to a central data warehouse. But scattered data marts can create headaches, ranging from inconsistent data formats and directories to strains on network bandwidth.

Even companies that try to feed data marts from a central warehouse "are finding it a little more difficult than they anticipated," said Wayne Eckerson, an analyst at Patricia Seybold Group in Boston. "And some are wondering whether it's better to just keep it all centralized."

But internal politics may make it hard to resist business unit demands for a stand-alone data mart, Eckerson said.

It is also unclear whether the virtual data mart approach will provide zippy enough query performance as data volumes spiral upward.

Blue Cross/Blue Shield of Tennessee is giving internal users custom views of its mainframe-based data warehouse. But it had to build a separate data mart for an external client to get good performance, said Frank Brooks, manager of data resource management at the Chattanooga insurer. And even internally, "the way we do it today may not be the right way a year from now," he said. □



SHORTS

Retaining CIOs gets pricier

Chief information officers should be paid $309,700 per year at large companies and $260,500 at midsize companies. That is the advice from Sacramento, Calif.-based management consulting firm Positive Support Review, Inc. After surveying about 400 companies in California and North Carolina, the consultants said those are the salaries needed to keep CIOs from leaving their jobs. The salaries, which include stock options and bonuses, are up 5.5% from the previous year.

Analysts: Citicorp to trim $1B

Shares of Citicorp shot up more than 5%, to $130.56, in New York Stock Exchange trading last week after two Wall Street analysts speculated that the New York bank would launch a $1 billion cost-cutting campaign. The analysts said the consolidation of back-office computer systems, which support the company's global consumer banking practice, will drive the cost savings. A Citicorp spokeswoman wouldn't comment on the reports. Chairman John Reed emphasized the bank's technology-based cost-cutting initiatives in a second-quarter financial report.

Lockheed wins $95M NYC bid

Despite objections from New York Mayor Rudolph W. Giuliani's office, the board of the city's Metropolitan Transportation Authority voted to award a $95 million information services contract to Lockheed Martin Integrated Business Solutions. The company is a subsidiary of Lockheed Martin Corp., which agreed in 1994 not to bid on city contracts for four years after authorities alleged the company had unfair access to top decision makers [CW, May 26]. Before the agency approved the contract, the New York Inspector General's office had cleared the Lanham, Md.-based company of charges that it had tried to influence bidding.

Consultant tax rule left intact

A proposal that would have eased tax rules for companies that hire independent computer consultants didn't make it into the final federal budget deal passed last week. The provision would have repealed Section 1706 of the Internal Revenue Code, which makes it possible for a consultant hired through a third party to be classified later as an employee — making the company liable for back taxes and penalties. The proposal was approved by the House of Representatives but not the Senate and didn't survive negotiations held by congressional leaders.

Sun buys appliance technology

Sun Microsystems, Inc. said it has agreed to acquire Diba, Inc., a Menlo Park, Calif.-based technology supplier for information appliances such as Internet-enabled televisions and set-top boxes. Diba will become a Sun business unit, the Consumer Technologies Group. Terms of the deal weren't disclosed.

Firms to link big iron to 'net

Netscape Communications Corp. has assembled a small army of network integrators to help bring the Internet to the mainframe. Seventeen companies will work with Netscape to develop interfaces with mainframe databases. The data can be viewed and manipulated with Netscape Communicator. Players in the deal include Attachmate Corp., BEA Systems, Inc., Beyond Software, Inc., Information Builders, Inc., NCR Corp., Tibco, Inc., Transarc Corp. and Wall Data, Inc.

Network General buys Cinco

Network General Corp. in Menlo Park, Calif., continued to expand its network management software lineup last week through acquisition. The new target is Cinco Networks, Inc. in Pleasanton, Calif., and the privately held vendor's NetXRay and WebXRay, both Windows-based network analysis tools. The companies expect to close the deal this month for $27 million.

SHORT TAKES IBM and SAP AG are shipping the R/3 database server that runs on the OS/390 mainframe operating system. SAP will resell IBM's DB2 database software directly to R/3 customers. ... Cisco Systems, Inc. has announced general availability of 56K bit/sec. modem technology for its high-end AS5200 remote access server. Cisco has standardized on Rockwell, Inc.'s K56Flex modem protocol and will support an industry standard through software upgrades. ... A task force of leading groupware vendors will meet this month in Munich, Germany, to hammer out a specification for exchanging electronic calendar information over the Internet. ... America Online, Inc. this week will announce the adoption of Network Health software from Concord Communications, Inc. in Marlboro, Mass., to help improve service reliability. ... A House subcommittee has endorsed legislation that would examine whether U.S. encryption software companies face foreign competition. The proposed Computer Security Enhancement Act also urges federal agencies to use commercial encryption products instead of a separate government standard.

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Speeding up SNA host access

By Bob Wallace

CISCO SYSTEMS, INC. last week said it is preparing a package that will let information systems managers provide faster access to SNA mainframe databases without the need for servers, gateways and associated maintenance.

Cisco and StarQuest Software, Inc. have developed software that runs on a router and can channel requests for data from TCP/IP desktops over LANs and WANs to SNA-based mainframes with IBM's DB2 databases.

Off-loading this task from the mainframe to the router increases network response time and frees up mainframe cycles that can be better used for other tasks, said the product's first beta tester.

"The router approach offered database access that was 30% to 40% faster than the server and gateway [approach]," said Manny Aguilera, a networking engineering consultant at Kaiser Permanente Health Plan, Inc. in Walnut Creek, Calif. "And we would save on all the maintenance needed for the many servers and gateways." The gateways and servers are being reassigned to other parts of the network to serve different purposes.

Other Cisco users said they are interested in the package. "This is definitely a major improvement for users looking to easily access applications on legacy systems because it's a clean approach that knocks off all the flavors of access we've had to go through in the past," said Bill Horst, telecommunications manager for New England at the General Services Administration in Boston. "This is utopia for users of DB2 applications."

Horst said the TCP/IP approach would "put SNA on the ropes" as a means of accessing DB2 applications and that the plan could have implications for other applications.

The Cisco/StarQuest package reduces the number of processes from four to one that data must go through from the mainframe to the desktop, Aguilera said. "And since we have people already skilled with routers, extra training is not needed. The old way, we had to send staff to school or bring in outside maintenance people, which gets expensive," he said.

Analysts lauded Cisco's first-of-its-kind approach. "It minimizes capital expenditures, reduces latency and the number of devices users need to manage," said John Morency, an analyst at The Registry, Inc., a consultancy in Newton, Mass. "That makes users happy campers."

StarQuest has adapted its software to become a piece of Cisco's Internetwork Operating Software, which runs in all its routers. The deal with Cisco is exclusive. The package initially can be used on Cisco's high-end 7500 router. The vendor is considering supporting it on smaller and less expensive routers.

Cisco and StarQuest said they will make a formal announcement within 60 days. The companies wouldn't reveal the name, pricing, availability or other details of the product. □

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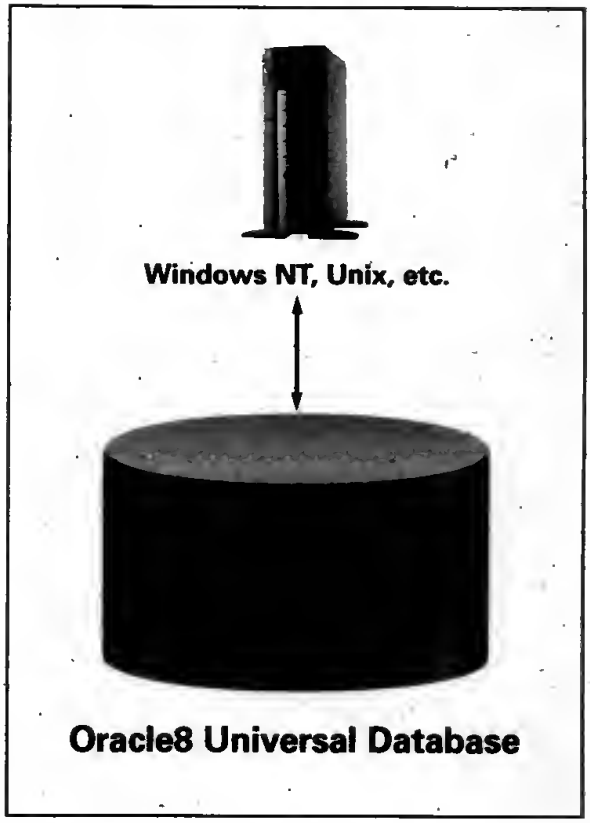

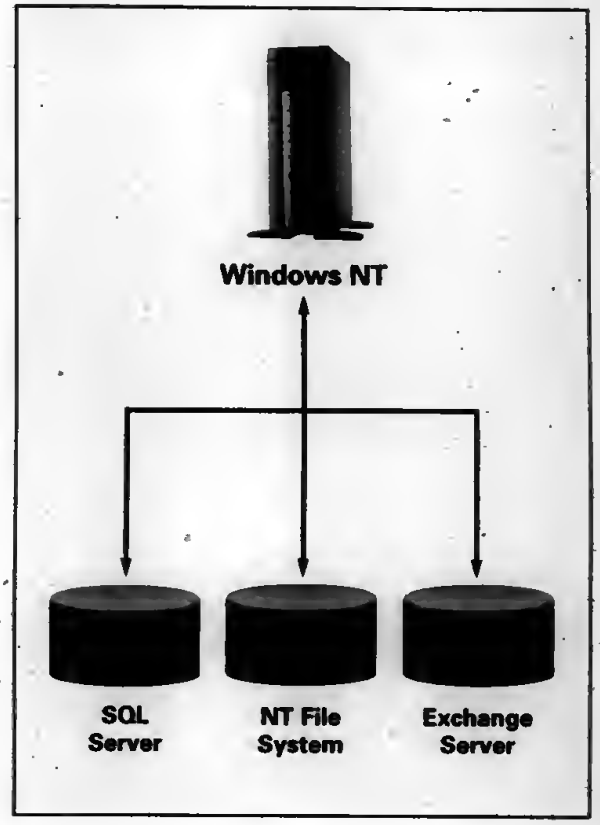

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Lotus bundles Explorer with Notes

▸ *Companies say integration will lower costs, but users doubt benefits*

By Barb Cole-Gomolski and Carol Sliwa

COMING TOGETHER

Tighter integration between Lotus and Microsoft products will mean users can:

- Launch Internet Explorer from a Notes client
- Use Microsoft Word as an E-mail editor in Notes
- Configure Lotus Domino mail users directly from the Windows NT directory

IN A MOVE that surprised many, messaging rivals Lotus Development Corp. and Microsoft Corp. have announced plans to integrate some of their key products.

Under the plan, Lotus will bundle Microsoft's Internet Explorer 4.0 World Wide Web browser with the upcoming Notes 4.6 release later this quarter. And Lotus' flagship groupware system will be made to work with future Microsoft technology, such as Windows 98's integrated browser/Windows interface.

PRODUCT INTEGRATION

The companies said the integration will result in lower training and administration costs for users.

However, several Lotus users said they doubted the move would result in tangible benefits.

"This is more of a marketing [deal]," said Jeff Held, a partner at the Center for Technology Enablement at Ernst & Young LLP, which has more than 40,000 Notes seats and has standardized on Microsoft Office. Held noted that Lotus has long supported Microsoft platforms and desktop technologies.

US West, Inc., which uses technology from Lotus, Netscape Communications Corp. and Microsoft, has standardized on Netscape's Navigator and Lotus' Personal Web Navigator.

Motti Goldberg, chief architect at US West, said he is pleased to see his strategic vendors cooperate. But because US West isn't standardized on Internet Explorer, he said he was disappointed that it isn't Netscape making the deal with Lotus.

Still, a move closer to Microsoft — and its Component Object Model — seem out of step for Lotus, which along with parent IBM, has been one of Java's biggest advocates. In fact, at his Spring/Comdex '97 keynote speech in June, Lotus President Jeff Papows described Java as "the last and best hope for write-once-run-it-anywhere [applications]."

SATISFYING USERS?

Scott Eliot, senior product manager at Lotus, said the company isn't religious about one object model over the other. "Microsoft has tons of users and controls tons of desktops," Eliot said.

He added that last week's announcement is an attempt to satisfy Lotus customers who have bought in to Windows NT and Microsoft's desktop architecture. "It would be foolhardy for us to have no solutions for those people," Eliot said.

Analysts had a different take on Lotus' motives. Tom Austin, an analyst at Gartner Group, Inc., said the move was a "clear attempt on the part of Lotus to bludgeon Netscape into breaking out the Navigator component of its Communicator client" for inclusion in the Notes box.

In the past, Lotus has bundled both Internet Explorer and Navigator with Notes. But the Netscape bundling deal fell apart with the June release of Communicator because Communicator has messaging and groupware features that overlap Notes.

At the Netscape developer's conference in June, Mike Homer, senior vice president of sales and marketing, said Netscape is seriously considering unbundling the browser piece of its Communicator client.

"We want to get the Communicator product out in the marketplace successfully, and we'll consider [unbundling] for future releases," he said.

Homer said the company will rewrite the components of Communicator in Java next year, making it more feasible to detach the browser piece from Communicator. □

IBM's faster Token Ring strategy pleases users

By Bob Wallace

IBM'S PLAN TO bump up Token Ring networks to 128M bit/sec. is eliciting sighs of relief from many large shops that hope to protect heavy investments in the tried-and-true LAN technology.

Speeding up Token Ring would let users sit tight and avoid spending big on new equipment and training for a competing, higher-speed technology such as Ethernet. It would also buy them time to plot a more leisurely and inexpensive migration to higher network speeds.

Faster Token Ring will give the technology a stepping-stone to Gigabit Token Ring, which IBM officials said it will begin offering as an add-on to its high-end switches next year.

FAST AS FAST CAN BE

IBM next month will reveal plans to roll out new adapter cards that take Token Ring from 16M bit/sec. to 128M bit/sec. It will also announce special cards for switches and server enhancements that support higher-speed desktop-to-server connections. All are due by the middle of next year, according to sources briefed by IBM. Pricing hasn't been set.

Of the 10 large Token Ring shops interviewed by *Computerworld*, nine said the plan has merit and represents a long-awaited sign from IBM of renewed interest in Token Ring. The users said they are hungry for more data to help them analyze the plan.

IBM's fast Token Ring plan

- Lets users ratchet up 16M bit/sec. Token Ring LANs to 128M bit/sec. in 32M bit/sec. increments
- Uses a standards-based approach
- Requires new adapter cards for desktop devices, cards for switches and server enhancements

Availability: Mid-1998
Price: Not available

"We've been putting off moving to Fast Ethernet and have been using enhancements to squeeze the most out of our Token Ring network," said John Arnold, director of information services at Edison Electric Institute, a Washington trade association for utilities. "We're watching all developments with high-speed Token Ring, as we're planning to make a decision in another year. We're waiting to get details on pricing and availability."

Token Ring technology — a forgotten stepchild to Ethernet — could have a long and prosperous life, according to Dave Eisenlohr.

"Token Ring will have a place in corporate America as long as efforts are made to keep the technology current," said Eisenlohr, vice president of data center operations at Pacific Exchange, Inc., a San Francisco stock exchange.

The company has a 700-node Token Ring network that supports three trading floors. "If companies like IBM make an investment, there'll be a strong market for the technology," Eisenlohr said.

Some users are anxious to hear from independent experts about the benefits and disadvantages of IBM's plan.

"We need people to clearly spell these out for users, as things are still in the very early stage," said Rich Whittemore, project manager for communications and distributed systems at International Flavor and Fragrances, Inc. in Union Beach, N.J. "We're interested in anything that reduces latency in our networks, but we're curious to see what IBM will be charging for these new adapter cards. If they're more expensive than Fast Ethernet units, users will stay away from them."

A LONG TIME COMING

One user was surprised that enhancements have been so long in the making.

"Token Ring is a robust technology that's been so good for so long," said Bill Botticello, a member of the technical staff at Chubb Life, an insurance company in Concord, N.H. "It's really a shame that all this took so long."

Chubb has 1,000 nodes of Token Ring and plans to stay with it. Higher-speed Token Ring would enable the company to run fatter pipes to its servers, he said.

Faster Token Ring may not have come in time for some users.

"It looks like it's a little too late, as the need for more bandwidth has been there a long time, and many users have turned to Ethernet," said Schndra Elgin, a network planner at Household Finance Co. in Prospect Heights, Ill.

"We use Token Ring for access to our mainframes, but our branch office network has roughly 20,000 to 25,000 Ethernet nodes. IBM's general direction is great, but by the time [fast Token Ring] is ready for prime time, many will have moved away from it." □

& Company links customers to order system via virtual private network. Page 49

COMPUTERWORLD

For these and other related links, point your browser at www.computerworld.com/links/97080.printerlinks.html

- Token Ring Concepts Page www.iol.unh.edu/training/tokenring/lanmh/tnconcepts/concepts.html
- Migration Issues and Strategies for Token Ring www.cisco.com/warp/public/473/tokenmigr.html
- Using Token Ring Switching to Increase Bandwidth www.cisco.com/warp/public/473/tr_business/tr_business.htm

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HP OPENVIEW

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*April 21, 1997

Unix grows at high end; NT takes over at low end

Year 2000, data warehousing top Unix areas

By Jaikumar Vijayan

FOR UNIX, the best may be yet to come.

The year 2000 issue and the growing demand for servers to run large data warehouse applications will power a steep increase in high-end Unix server growth over the next few years.

Unix will continue to take a hammering from NT in the low-end server and workstation space. But in the market for database and large application servers, Unix will grow from sales of $20 billion last year to $40 billion in 2000, according to an upcoming report from Aberdeen Group, Inc. in Boston.

For users, the predicted boom will mean additional features and capabilities, as Unix vendors begin building up their boxes to handle more data-center and mainframe-class applications, analysts said.

"If you are an IT manager looking to replace mainframe applications the first choice will be Unix" over the next few years, said Jean Bozman, an analyst at International Data Corp. (IDC) in Mountain View, Calif.

Although Aberdeen's figures are the most optimistic yet for Unix growth, research firms such as IDC, Gartner Group, Inc. and Forrester Research, Inc. have predicted that at the high end at least, Unix will continue a strong showing for the next few years.

"Unix vendors have tended to treat the market as a price and commodity market, but that's going to change" as they go for a larger slice of the data center pie, said Aberdeen President John Logan. "There is going to be less price competition going forward" and more of a focus on value-added features and services, he said.

Meanwhile, sales of Windows NT servers will grow at an even more spectacular rate over the next few years in terms of unit volume and percentage growth — from $800 million last year to $9 billion in 2000, according to Aberdeen.

But issues relating to scalability, reliability and labor availability mean that most of that growth will be restricted to the network and low-end application server market.

The Unix surge will begin when mainframe shops start giving up year 2000 repair efforts and simply start moving some smaller applications to Unix servers, analysts said.

"We estimate that 80% of mainframe repair projects are simply not going to make it on time," Logan said.

Palm Beach County, Fla., for instance, is moving some large applications off its IBM mainframe to Unix servers from Sun Microsystems, Inc. at least partly because of year 2000 issues, said Michael Hecht, a senior server administrator for the county's information systems department.

"Rather than invest a great deal of money in fixing all of our applications, we made the decision to move where possible to Unix," he said.

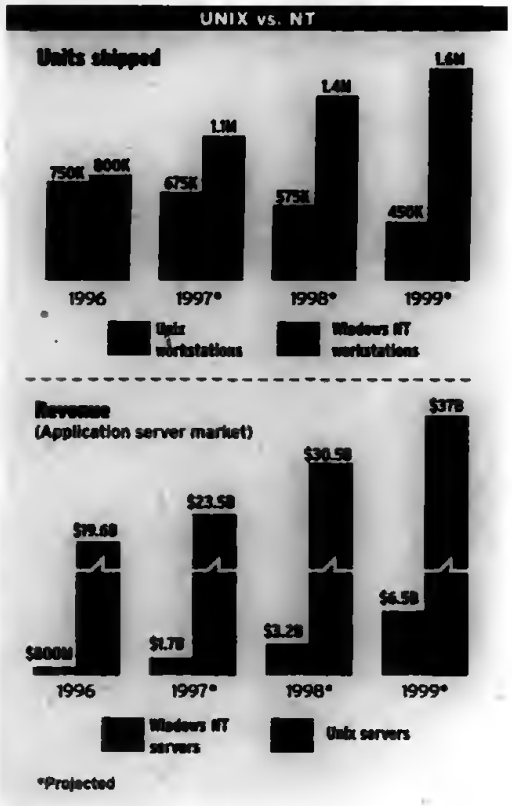
DATA WAREHOUSE NEEDS

But the year 2000 problem won't be the only factor that pushes Unix sales in the next few years, some observers said.

"We have seen a sharp increase in the number of users looking to [dramatically] increase the size of their data warehouses," said Brian Richardson, a director at Meta Group, Inc. in Stamford, Conn. "That's going to fuel a significant growth in the high end of the server market."

Enterprise servers such as IBM's SPa, Sun's UltraSPARC boxes and Hewlett-Packard Co.'s V-Class systems routinely come with technology optimized to handle applications such as Oracle Corp.'s databases or SAP AG's R/3 resource planning software. That includes features such as very high-scalability, high-availability clustering and mainframe-like storage capacities.

"A lot of people are using year 2000 as an excuse to move all their applications away from their mainframes" to Unix, said David Krauthamer, MIS manager at Parker Hannifin Corp. in Rohnert Park, Calif. "But the real value of Unix is going to be in its use as database servers," with NT running most of the front-end applications. □



Source: Aberdeen Group, Inc., Boston

Windows NT's flexibility helps it gain ground in software automation systems

By Randy Weston

ALTHOUGH UNIX is still the market leader on the shop floor, Microsoft Corp.'s Windows NT is catching up fast, according to a new study.

Advanced Manufacturing Research, Inc. in Boston reports that because of NT's flexibility, manufacturers are adopting it at a furious pace for running plant operation software (see chart).

"The NT operating system is better equipped to manage the market's changing software needs," said Bill Swanton, an analyst at Advanced Manufacturing.

"Last year, Unix dominated with a 28% market share, while NT trailed at 20%. By 2001, Windows NT will surpass Unix in market share and will clearly emerge as the operating system of choice."
– Bill Swanton, Advanced Manufacturing Research

"Last year, Unix dominated with a 28% market share, while NT trailed at 20%," Swanton said. "By 2001, Windows NT will surpass Unix in market share and will clearly emerge as the operating system of choice."

Swanton said manufacturers are increasingly looking at less expensive software automation systems, such as plant control systems from The Foxboro Co. in Foxboro, Mass., and Honeywell, Inc. in Minneapolis.

But the technology that drives those control systems is advancing rapidly, and manufacturers are finding NT a much easier platform to work with when changing software often.

Colorado Springs Utility uses Foxboro's control system to run three of its water treatment plants in the central Colorado city. The two large plants are on a Unix platform and the smaller one runs on NT, but one of the larger plants will soon run Unix and NT side by side.

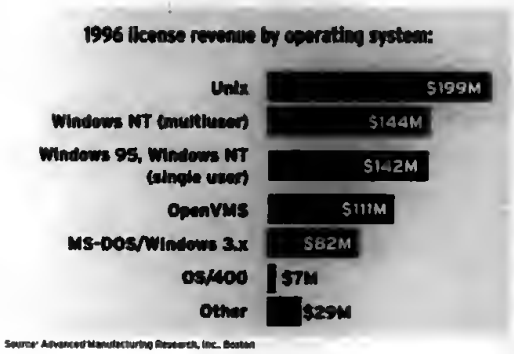
Water treatment supervisor Robert Doiel said NT is more flexible. But for some uses, Unix is much more robust and will always have a place at the plant, he said.

"We are looking at running some Internet-based control applications here," Doiel said. "For that, the Unix platform is the way to go. It's a lot more reliable for running Internet applications."

Swanton agreed but said even the use of Unix will fade as more historically mainframe shops move to client/server and avoid Unix in the process.

"Unix is becoming irrelevant other than a host for Java applications," he said. "But we have noticed people who missed the Unix revolution are bypassing it altogether now and going straight to NT. It's a more natural progression since NT has more in common with VAXes than Unix does." □

Unix-based Informix users start to heed Windows NT call. Page 55



Source: Advanced Manufacturing Research, Inc., Boston

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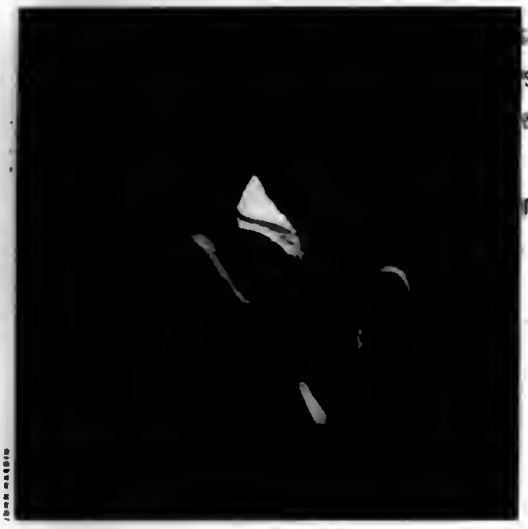
Cards to be ready before infrastructure

By *Sharon Gaudin*

ANALYSTS PREDICT it will be five to eight years before smart cards really catch on in the U.S. The holdup isn't expected to be the Java technology but the time it will take to update more mundane devices, such as soda machines, pay telephones and tollbooths.

Visa executives said they will have millions of Java-based chip cards issued by the end of next year. But industry observers warned that many devices still won't be able to use them.



tomers should be
start using smart cards
econd half of 1998.
Yen,
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NEW INFRASTRUCTURE

"The problem is getting people to cooperate," said Octavio Marenzi, research director at Meridien Research, Inc., a Needham, Mass.-based financial technology research firm.

"A single bank cannot go and introduce smart cards throughout the market. It's about building infrastructure. It's getting new phones that will take the cards, new vending machines, getting new equipment into retail stores," he said.

Philip Yen, senior vice president for Visa's chip platform, said negotiations are already under way with various manufacturers to begin producing the needed equipment. "I think customers will be able to start using them in the second half of 1998," he said.

Marenzi predicted it would be at least five years before the cards can be commonly used.

Cynthia Weaver, an analyst at the Global Smart Card Advisory Service, a cooperative program of The Tower Group and Centum Consultancy, said the U.S. will continue to lag behind Europe in its adoption of smart-card technology.

"The U.S. will naturally be much slower to accept the technology because we have such a widespread magnetic strip infrastructure," she said.

"Other countries are better able to leapfrog over the U.S. because the strip isn't as widely used over there," Weaver explained. □

Permanent record

Buying a soda at the store down the street. Paying your bills in New York. Accessing a network computer at work.

The potential downside to being able to do so much with your smart card is that someone, somewhere just might be able to keep much better records about where you spend your time and how you spend your money. Consumers may be quick to worry that Big Brother may be looking over their monthly bills and getting a better description of their lives.

Well, that may not be so easy to do, said Philip Yen, senior vice president for Visa's chip platform.

"We are very well aware of confidentiality and security issues," Yen said. "It's no different from people being able to collect information from different places. We clear the transaction and pay the merchant. After that, we don't record it. So it would be impossible to track people."

Yen conceded that individual companies, such as retailers and telephone utilities, will be better able to keep records if they want to.

— Sharon Gaudin

Visa leads charge toward Java-enabled chip cards

CONTINUED FROM PAGE 1

these applications and new functions on the cards. And our customers want multiple functions." Yen said Visa's 21,000 member banks approved the move to Java.

Novus Services, Inc.'s Discover Card and American Express Co. are getting into the smart-card arena, too, but executives from those companies wouldn't say if they plan to use Java technology.

MasterCard International, Inc. is working with a group of other companies, such as AT&T Corp., First Chicago NBD Corp. and Wells Fargo & Co., to establish a new electronic-cash system. But analysts said the system should be compatible with Java.

JAVA JUNKIE

"We absolutely support the Java initiative," said Michael Love, vice president of the smart-card division of Charlotte, N.C.-based First Union National Bank, the fourth-largest issuer of debit cards in the U.S. "Smart cards play a broader role in the banking spectrum than just retail electronic purse cards. Java technology will allow us to pursue other high-tech applications, particularly in terms of offering digital authentication and higher security on the Internet."

By the end of next year, Visa expects to have a million to 3 million Java-based smart cards in use in the U.S., Yen said.

By 2001, the goal is to have about 200 million chip cards circulating worldwide. Nearly all will be Java-based, Yen said. Today, Visa has 600 million regular cards issued around the globe. Smart cards based on other platforms are fairly popular in Europe but have yet to catch on in the U.S. (see story above).

The chip will include a Java Virtual Machine, to interpret the Java code to each different machine, and a processor that will enable the card for multiple uses, including the following:

- Transferring cash from an automated teller machine to the card, thus transforming it into an electronic purse. Instead of digging around for change, consumers could use the card at pay telephones and vending machines — and the charge would be subtracted from the amount that was transferred into the card (see story at top right).
- A form of payment at tollbooths or mass transit terminals.
- Enhancing security in electronic commerce. The card can digitally identify its user, automatically loading in digital signatures and encryption to further secure online transactions.
- Controlling access to buildings, rooms or computers.

Consumers still will be able to buy items on credit, receive cash advances and debit purchases from their checking accounts.

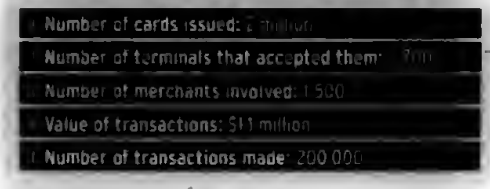
Michael Killen, president of Killen & Associates, Inc., an analyst firm in Palo Alto, Calif., said he could do much more with a Java card than with a traditional credit card. "I could go to a telephone, stick in my card, punch in my ID number and password, dial Charles Schwab and buy $100,000 worth of Microsoft stock. The computer system would check out my card and determine that I'm Michael Killen and would do extensive authentication of who I am."

"Java and smart cards have a lot of potential to enable us to offer more customized service to our customers," said Susan Baumann, vice president and manager of San Francisco-based BankAmerica Corp.'s smart-card group. "In our pilot programs, customers have liked the convenience of the features, and merchants have appreciated the faster transactions."

Bank of America has been pilot-testing smart cards with 4,000 of its employees for the past two years. Visa also has scheduled pilot tests at several locations across the country.

Yen said Java-based smart cards differ from other chip cards, which are generally built with assembly code or C++. Today, most card manufacturers have their own proprietary platforms. So if Visa wanted to add a feature to its cards, it would have to write a separate application for each platform, recall people's cards and then redistribute new ones with the added application. □

Visa's smart card pilot in Atlanta last year


Number of cards issued: 2 million
Number of terminals that accepted them: 700
Number of merchants involved: 1,500
Value of transactions: $11 million
Number of transactions made: 200,000

Source: Meridien Research, Inc., Needham, Mass.

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For links on smart cards, point your browser at www.computerworld.com/links/sprego1/smartlinks.html.

Information on Java cards can be found at these URLs:

- The Java Card API: www.java.sun/products/commerce/doc_javacard.ps
- The Java Card API FAQ: www.javasoft.com/marketing/collateral/commerce_faq.html

Laptop outlook: Less weight, more features

By Kim Girard

THIS FALL'S laptop lineup will feature the slim look on some models, but others will show off bulked-up power and management features.

Higher-end notebooks to debut in September will boast 14-in. screens, Intel Corp. 200-MHz processors and 5G-byte hard drives, analysts said. For example, IBM's 770 series will be built to order and will have sensors that monitor heat inside the computer.

Compaq Computer Corp., IBM and NEC Corp. are leading the charge toward slimmed-down laptops.

Compaq last week began delivering 6-pound notebooks that are 1.5-in. thick yet have full-size screens and CD-ROM drives. Like IBM's ThinkPad 560, the Armada 7330T and 7350MT offer standard-size screens and keyboards but are lighter than competing machines. Prices will run from $4,399 to $4,899.

Compaq's 7330T and 7350MT slimline notebooks

Memory:	16M to 32M bytes
Display:	12.1-in. screen supported by a 2M-byte video memory
Hard drive:	Removable 2.1G-byte drive and a second expansion bay for a CD-ROM drive, a disk drive or second hard drive
Modem:	33.6K bit/sec. standard with promised software upgrade to 56K bit/sec.

Other vendors playing catch-up will have to retain features that users expect — CD-ROMs, hefty hard drives and floppy drives — while whittling away extra weight and keeping prices down.

For Asmar Madyun, a technical manager at AT&T Corp. in Berkeley, N.J., weight is a secondary issue.

He said his Compaq and Toshiba America Information Systems, Inc. users want faster machines and longer-lasting batteries, and he wants more-rugged machines. "The doors still tend to break open and crack in the corner of the chassis," he said.

"I'd like to see [notebooks become] lighter, more affordable and include a battery that works," said Mike Murray, director of national accounts at Lanier Worldwide in Atlanta. The company uses Compaq's LTE 5000 line of notebooks. Murray said his battery dies after 40 minutes.

Francis Nievers, a systems analyst at Sun Co. in Philadelphia, buys Compaq and Toshiba notebooks and plans to upgrade them by year's end. He said his sales force is less concerned with weight than with a glare-free screen.

Ken Dulaney, an analyst at Gartner Group, Inc., a Stamford, Conn.-based consultancy, said the slimline market is quickly moving to lighter machines that have larger screens, which enables manufacturers to spread out components.

Information systems departments are cooperating by compromising on external floppy disks and removable components that enable a thinner design. And half-inch hard disks offer increasingly greater capacity.

"Putting top-notch notebook performance in a 2-pound package is well within reach," Dulaney said.

Fred Winograd, chief technologist at Montgomery Securities, Inc. in San Francisco, said he is content with Digital Equipment Corp.'s Ultra, which weighs 4.1 pounds without its CD-ROM. "I look at some of the notebooks that are out there, and they're over 7 pounds," he said. □

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Security vendors team on integration

▶ *Firewall vendors missing from SecureONE agreement*

By Sharon Machlis

FOUR BIG GUNS in the security industry have joined forces to make it easier for their products to work together. But there were some noticeable absences in the SecureONE framework, such as representation from a firewall vendor and a single approach for managing the various components.

SecureONE will include a set of application programming interfaces (API) compatible with software from all four vendors. RSA Data Security, Inc., Security Dynamics Technologies, Inc., VeriSign, Inc. and McAfee Associates, Inc.

Still under development, the API is expected to be included in encryption tool kits from RSA, the market leader in commercial cryptography, in the fourth quarter of this year. Applications that use the new API aren't expected before early next year, said Jim Bidzos, president of RSA.

SecureONE also involves several cross-licensing arrangements among the products for encryption, user authentication, digital certificates and antivirus scanning. For example, McAfee could build RSA digital signature support into its antivirus software (see chart).

SecurityONE cross-licensing highlights

- McAfee could build RSA digital signatures into antivirus software
- Security Dynamics could bundle McAfee's VirusScan with RSA SecurPC
- McAfee could support Security Dynamics' user authentication tokens, smart cards and other products

Last week's announcement didn't include a unified way to manage the various security components across an enterprise, something that many harried systems administrators said would help trim staff time needed to oversee various network components. And no firewall vendor is currently involved in the effort, although officials from the alliance said their standard would be open to other interested vendors.

PRO-ALLIANCE

Several users welcomed the alliance. "I think it's going to be very useful," said Christopher Logan, CEO at San Francisco-based Fabrik Communications, Inc., which offers E-mail services to firms.

Companies need to move their security to "the boundary of an organization" for it to be effective in protecting crucial data and preventing costly, time-consuming virus attacks, Logan said. And different security components need to be tightly integrated, such as making sure encrypted E-mail can still be scanned for viruses.

A common API should make it easier for developers to incorporate virus scanning into encrypted data. That will allow messages to be checked as they enter a network, instead of after they are decoded on a desktop.

"I think this is very helpful because it enhances the security of our network environment," said Bennie Lau, a PC/LAN/WAN analyst at Wells Fargo & Co. in San Francisco.

Symantec Corp. in Santa Monica, Calif., hasn't seen technical specifications for the API and couldn't comment, said Bob Pettit, director of product management. "We have had an API for antivirus for four or five years," he said. "There really is a large number of security vendors." Customers want their vendors to have good relationships with many companies in the industry, not just a few, he said. □

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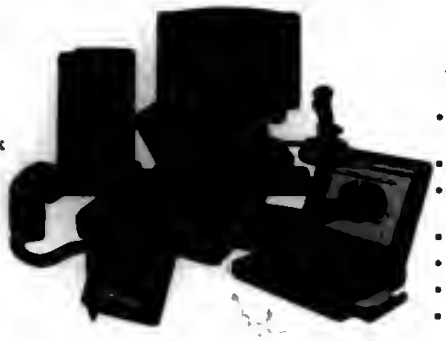
- The Great NC Debate



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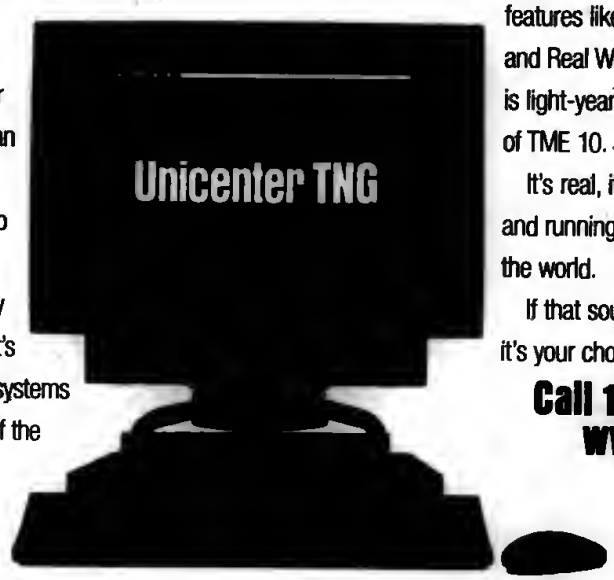

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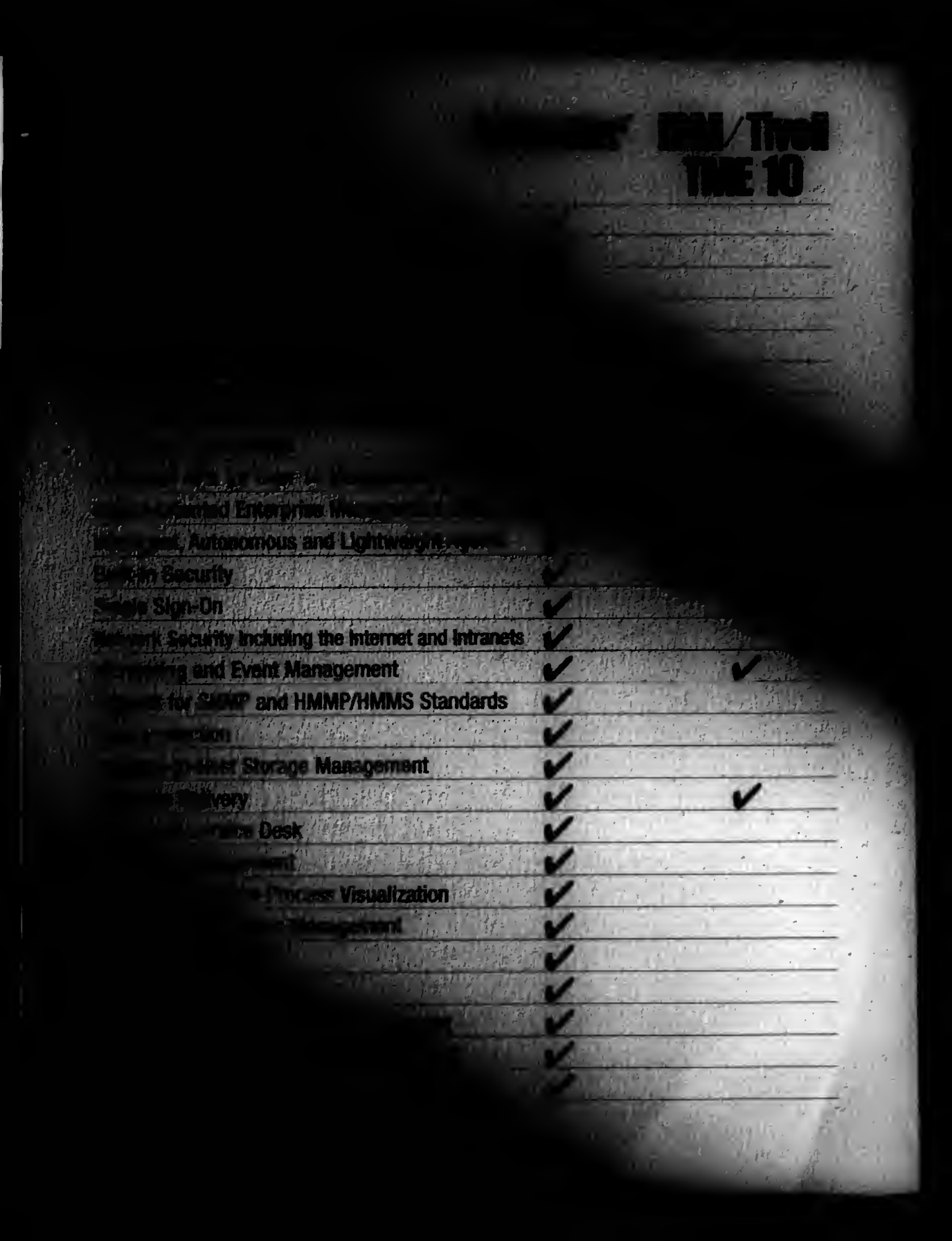
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Super CIOs are young, creative and ambitious

CONTINUED FROM PAGE 1

well-rounded manager who can easily fit in with other boardroom executives.

"It's a person you'd want to hang out with on a Saturday night," said Don Pizzi, managing principal at Mark Adams Associates, an information systems executive search firm in Westfield, N.J.

Murphy, for example, is a music collector who spends his off-hours playing saxophone and competitive basketball. At his last job, he headed Avis, Inc.'s WizCom group, which sells software and systems to other car rental companies. When he got the call from Bristol, he had four other job offers.

And Murphy is ambitious, with an eye toward becoming a CEO. "As a motivated businessperson, that's the ultimate goal. I don't see any reason why the CIO can't be a stepping-off point to CEO," he said.

"With a lot of CIOs I interview today, you couldn't tell that they were techies if your life depended on it. Their real strength is that they come off like general managers," said Jim McClure, a Boston-based vice president at executive recruiting firm Korn/Ferry International.

But the right mix of business, interpersonal, leadership and technology skills doesn't come cheap.

Recruiters said CIO salaries and bonuses are at an all-time high, and climbing even higher, as companies bid against one another for the best and the brightest in a limited labor pool. The new-breed CIOs are getting compensation packages worth $600,000 to nearly $2 million per year — well above the average of about $100,000 per year for IS chiefs.

"It's not just about systems and infrastructure"

"It's crazy. I've seen things I never imagined I'd see. People [getting] counteroffers and 50% to 60% increases are not uncommon," said Jeff Leon, managing director of the IS practice at Russell Reynolds Associates, an executive recruiting firm in New York.

One CIO went to his boss to resign from his $175,000-per-year job and take a new CIO post that paid $250,000 per year.

"Instead, his employer upped his base pay to $350,000 and gave him a guaranteed bonus and a two-year contract and a ton more stock options than he already had," Leon said.

But companies also expect much more from CIOs than ever before. CIOs are responsible for increasing shareholder value and setting a company's strategic technology direction. That means helping increase sales, reduce costs or develop products and services.

For example, Mike Hernon, 42, is the city of Boston's CIO and the main catalyst behind a high-tech incubator initiative known as Techctr@Boston. Designed to attract multimedia start-up companies to the city, the center provides flexible leasing arrangements, shared computer networks and office equipment to young Internet-related businesses.

Hernon, who is an avid sailor and holds an advanced degree in psychology, worked for nine months with venture capitalists, real estate developers and Internet entrepreneurs to create the center. The economic benefits for the city include increases in jobs and the tax base.

Hernon said the economic-development role is entirely appropriate for a CIO. "The IS function is no longer administrative support. It really is a strategic position. A lot of it is marketing your vision," he said.

The city of Boston's CIO Mike Hernon says the IS function involves "marketing your vision"

NO TECHNO TALK

At Avon Products, Inc., Spencer J. McIlmurray never mentions "systems" or "technology" when talking about his job as vice president of technology services at the $4 billion global cosmetics giant.

Instead, the 43-year-old former management consultant and Gartner Group, Inc. analyst likens himself to a catcher in a baseball game.

"You have a full view of everything, and you're in a very stroog position to influence how the game is played," McIlmurray said. Diplomacy, negotiation and leadership skills are critical, he said.

For example, Avon does business in 128 countries, so McIlmurray's role is that of diplomat. He negotiates for services with different national telecommunications authorities and forges alliances with suppliers and distributors around the world.

"Negotiation skills are exceptionally important," said Denis J. O'Leary, The Chase Manhattan Bank Corp.'s 40-year-old CIO, who presided over the bank's merger with Chemical Banking Corp. last summer. "The percentage of time spent on pure technology is low. A lot more time is spent around change management and leading people to decide to make the changes."

But moving up the IS ranks with purely technical skills won't be enough to land the high-paying executive positions.

"Now as a CIO, you have to be as good as the marketing VP, logistics VP and the finance person. The days of the person inching forward year after year with strong technical skills alone is gone, big-time," said Eric Singleton, CIO at AlliedSignal, Inc.'s Automotive Aftermarket Division in Rumford, R.I.

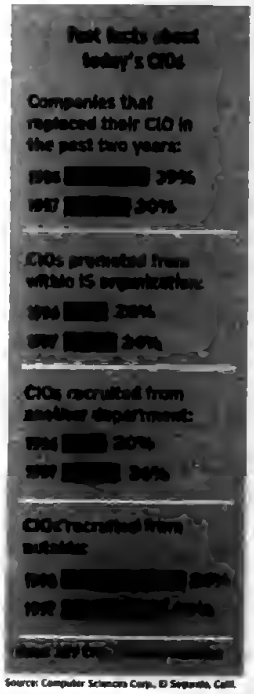
At 35, Singleton heads IS for AlliedSignal's only consumer business, which sells antifreeze and other automotive goods through retailers and, eventually, directly to consumers via an electronic commerce system under construction.

THE VISION THING

Already Singleton has proved adept at marketing his vision. In his previous post at another AlliedSignal unit, he helped develop and roll out a set of shrink-wrapped software tools to more than 85,000 users. The package, which cost $500,000 to develop, automated the company's quality process by tracking the activities of several hundred autonomous project teams spread out over three divisions and 43 countries.

Now, Singleton, who spends his weekends crewing on an America's Cup racing boat, said he hopes to shrink the time it takes to get products to market, either by applying available IS tools or perhaps by creating an entirely new tool.

"It's not just about systems and infrastructure. It's about full-out leadership and pushing and pulling the corporation forward," Singleton said. "Today, you have to combine all of these things into the art of IS." □



Source: Computer Sciences Corp., El Segundo, Calif.

Top dollar for cream of the crop

The market for CIOs just keeps getting hotter, as companies seek competitive advantages from electronic commerce and other new technologies. Executive recruiters said the number of CIO searches has skyrocketed in the past two years.

And money appears to be no object for companies set on acquiring a true Renaissance IS executive.

For companies with an IS budget of $150 million, the average CIO base salary is $300,000 to $400,000, recruiters said. Signing bonuses run up to $150,000, and stock options can amount to another $300,000 to $400,000 over a period of several years.

At $1 billion-plus financial services companies, CIOs can make nearly $2 million per year, including stock options, according to David Feste, managing partner at Cromwell Partners LLC and a contributing analyst at Meta Group, Inc. in Stamford, Conn. These CIOs get $800,000 to $900,000 in salary, plus another $800,000 to $900,000 in cash bonuses, he said.

These figures are well above average, and they apply only to the cream of the crop.

"People are recruiting CIOs more in the vein they would chief financial officers or their top management team," said Jim McClure, a vice president at Korn/Ferry International.

Also, searches are taking longer — sometimes up to a year. Then, once a candidate is found, interviews with the CEO, chief operating officer and chief financial officer and other high-level executives don't commence.

"More companies are ... making sure they have buy-in from all of the senior team members," said Donald Pizzi, an IS executive recruiter at Mark Adams Associates. — Julia King

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- MS Windows NT 4.0 with Free Telephone Support
- Optional NEC Docking Station 6000 Plus, add $899
- Optional 2nd Lithium Ion Battery, add $199
- Optional NEC MiniDock 6000, add $499

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Versa 6060

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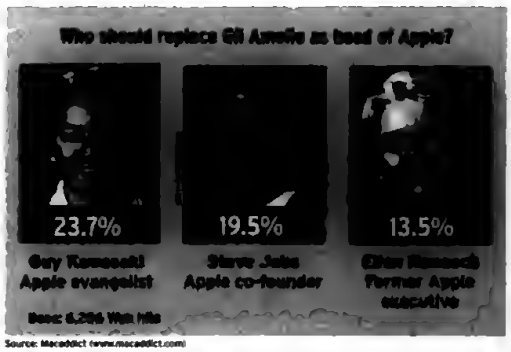
Briefs

Jobs to Pixar: No exit plans

▶ *Co-founder's return would reinvigorate, but firm needs new strategies*

By Kim Girard



APPLE CO-FOUNDER Steve Jobs quickly quashed last week's rumors that he planned to reunite with Apple as its new chairman — an appointment some users said would help rejuvenate the struggling company.

In an electronic-mail message sent to employees at Pixar Animation Studios, Jobs said he had rejected Apple's offers to become chairman and CEO. Jobs is CEO, president and chairman of the board at Pixar.

"I got a call from Apple's board of directors three weeks ago informing me that they were going to fire their then-current CEO, Gil Amelio, and asking me to return to Apple as their CEO," Jobs wrote last Thursday. "I declined, but agreed to step up my involvement with Apple for up to 90 days." When the board asked him to be chairman, Jobs said he again declined.

TURNAROUND STRATEGIES

"So don't worry — the crazy rumors are just that," he wrote. "I have no plans to leave Pixar."

Jobs is the scheduled keynote speaker this week at Macworld Expo/Boston, where some industry observers are still expecting the Apple co-founder to be named Apple chairman.

Jobs, 42, was forced out of the chairman's seat 12 years ago. He returned last December as a consultant after he sold his company, Next Software, Inc., to Apple. But some said Jobs' grip on Apple could scare away potential CEO candidates.

"He's a strong personality, and it may make it hard for Apple. Who's going to want to run a company with Steve Jobs?" said Rex Sanders, information systems coordinator at the coastal and marine geology department of the U.S. Geological Survey in Menlo Park, Calif.

Industry insiders said Jobs played a part in ousting Apple Chairman and CEO Gil Amelio, who left after just 17 months.

The board cited dissatisfaction with the Cupertino, Calif.-based company's financial failures.

Pieter Hartsook, an independent Macintosh industry analyst, said Jobs is in an odd situation because although he is the company's de facto leader, he lacks the title.

"Right now he's kind of like a teen-ager. He gets to boss people around and have fun and he has no responsibility for his actions," Hartsook said.

Jobs could rally the company and improve morale, but as chairman he wouldn't be a "silver bullet," said Dan Kunstler, an analyst at J. P. Morgan Securities in San Francisco. "This image of anyone coming in on a white horse as savior, I just don't think that applies."

More important, Apple needs to focus on fixing its business and licensing strategy and keeping its products on schedule — a downfall that has irked users.

Sanders said he recently tried to purchase Power Macintosh 8600s and couldn't get them. The other options: 7300s and 9600s. He chose 7300s. □

CONSOLIDATION

National Semi, Cyrix pool their chips

By April Jacobs

NATIONAL SEMICONDUCTOR Corp.'s decision to acquire Cyrix Corp. is a sign of growing consolidation among chip makers, which may mean stiffer competition for Intel Corp., analysts said.

National Semiconductor, in Santa Clara, Calif., is buying Cyrix mostly for its desktop chip, which is x86-compatible and competes with Intel's Pentium line. National Semiconductor still will supply chips for peripherals to Cyrix rivals Advanced Micro Devices, Inc. and Intel.

Analysts said the deal is a good one for National Semiconductor and Cyrix. "This will be a very good thing for Cyrix, because they'll get additional financial support from National Semiconductor," said John MacGilvary, chief analyst at Datapro Information Services Group in Delran, N.J.

"This will be a very good thing for Cyrix ..."
– John MacGilvary, Datapro

"National Semiconductor can provide more for them in terms of manufacturing capabilities as well. But whether this will improve their marketability remains to be seen," he said.

MacGilvary said National Semiconductor can benefit by having a new desktop chip to leverage.

National Semiconductor and Cyrix plan to pool their resources to make processors for inexpensive PCs and new devices such as handhelds.

Intel still retains overwhelming market share, but the $550 million deal may spell increased competition for the Santa Clara company.

Intel recently reduced prices on its Pentium MMX line by almost half. For example, a 200-MHz Pentium MMX chip that cost about $500 in June now costs about $250. Prices for portable chips were cut to about $125, a reduction of 46%. □

Amdahl buyout produces questions, not change

By Tim Ouellette

MAINFRAMES PIONEER Amdahl Corp. has decided it can't go it alone any longer.

Fujitsu Ltd. in Japan this week will begin purchasing the outstanding shares of Amdahl stock for $12 a share — or approximately $850 million for the total deal.

"This merger will give us the financial staying power we need to compete," said Amdahl CEO John Lewis.

Amdahl needs ready access to cash to keep up with rivals IBM and Hitachi Data Systems Corp. in the mainframe market, where prices are falling and product life cycles have shrunk from five years to barely one year. And the pressure is on: Amdahl has already mapped out its three-year product plan for users and needs to deliver.

Little will change at Amdahl after the merger. The Sunnyvale, Calif., firm will retain its name, management team, employees and existing contracts.

But questions remain.

"Why now, when you are turning Amdahl from a hardware into a consulting company?" asked John Jones, an analyst at Salomon Brothers, Inc. in San Francisco. Amdahl expects nonhardware sales to be 67% of its revenue this year. Other analysts said the $12 tender offer was low based on Amdahl's growth in the consulting area. Lewis said it was a fair price. But shareholders didn't agree.

The merger will give the company financial staying power

They are filing a class action lawsuit to stop the deal, claiming Amdahl isn't taking shareholders into account with the low price. But since Fujitsu already owns 42% of Amdahl shares, it needs to buy only another 9% to get controlling interest. □

SECRETS & STRATEGIES

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70. Mining/Construction/Petroleum/ Refining/Agriculture
80. Manufacturer of Computers, Computer-Related Systems or Peripherals
85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
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21. Dir./Mgr. MIS Services, Information Center
22. Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr./PC Mgr., Tech. Planning, Administrative Services
23. Dir./Mgr. Sys. Development, System Architecture
31. Programming Management, Software Developers
41. Engineering, Scientific, R&D, Tech. Management
60. Sys. Integrators/VARs/Consulting Management

CORPORATE MANAGEMENT
11. President, Owner/Partner, General Mgr
12. Vice President, Asst. Vice President
13. Treasurer, Controller, Financial Officer

DEPARTMENTAL MANAGEMENT
51. Sales & Mktg. Management
70. Medical, Legal, Accounting Mgt.

OTHER PROFESSIONAL MANAGEMENT
80. Information Centers/Libraries, Educators, Journalists, Students
90. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply.)
Operating Systems
(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ❑ Yes ❑ No
Networking Products ❑ Yes ❑ No
Intranet Products ❑ Yes ❑ No

4. Which of the following products do you buy, specify, recommend or approve the purchase of? (Check all that apply.)
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(b) ❑ Internet browsers
(c) ❑ Web authoring/development tools

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60. Government - State/Federal/Local
65. Communications Systems/Public Utilities/Transportation
70. Mining/Construction/Petroleum/ Refining/Agriculture
80. Manufacturer of Computers, Computer-Related Systems or Peripherals
85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
90. Computer/Peripheral Dealer/Dist./ Retailer
95. Other_____ (Please Specify)

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OTHER PROFESSIONAL MANAGEMENT
80. Information Centers/Libraries, Educators, Journalists, Students
90. Other Titled Personnel

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(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ❑ Yes ❑ No
Networking Products ❑ Yes ❑ No
Intranet Products ❑ Yes ❑ No

4. Which of the following products do you buy, specify, recommend or approve the purchase of? (Check all that apply.)
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Vendors create blueprint for linking apps

By Randy Weston

LINKING DISPARATE applications is about to get much easier as vendors sign on to a set of common blueprints for building connections between products.

"The two main benefits we are driving for and hearing from users are: faster and cheaper implementations and much cheaper maintenance over time," said David Connelly, chief technology officer at the Open Applications Group (OAG) in Chicago.

OAG specifications for linking enterprise resource planning applications:

- Manufacturing to human resources
- Manufacturing to purchasing
- Manufacturing to order management
- Accounts payable to purchasing
- Invoice matching for two-, three- or four-way matching
- Human resources to financials
- Chart of accounts synchronization

The nonprofit OAG is a consortium of application vendors that includes market leaders SAP AG, Oracle Corp. and PeopleSoft, Inc.

Most of the vendors either have products on the market that comply with the specifications or are integrating the specifications into the next release of their products.

Called OAGIS 5, the latest batch of specifications goes to the heart of corporate computing by giving vendors and users common ways of linking applications such as financials to purchasing or human resources to financials (see chart).

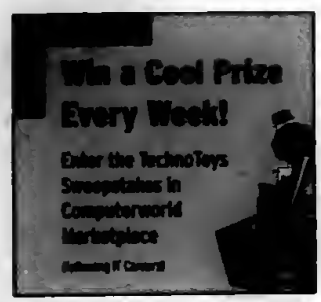
The idea is to create common pivot points, the place at which independent applications connect, Connelly said. The specifications "explain how the application program methods can exchange data with other compliant business applications."

But Connelly cautioned that these specifications aren't the Holy Grail of best-of-breed computing. Users will still need to do work, specifically the technical aspects of melding two applications.

What the specifications do is give users the blueprint. Still, users are glad their vendors are getting together to come up with some form of common gateway among products.

"It makes the idea of best-of-breed more feasible and less risky," said Carlos Cabrera, chief information officer at Sun Chemical, Inc. in Fort Lee, N.J.

"Although most companies in reality do follow some form of integration with legacy or transition systems, the idea of a totally integrated solution is always appealing," he said. "But in most circumstances it is not practical, either due to cost or lack of functionality or the fact that the company just does not have all their modules out on the market on time, and the customer cannot afford to wait." □



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And we know a lot of you IT leaders don't want to wait that long. (Hell, a lot of you order drip coffee 'cause you don't want to wait for a latté.) You want today's IT headlines, well, today.
COMPUTERWORLD

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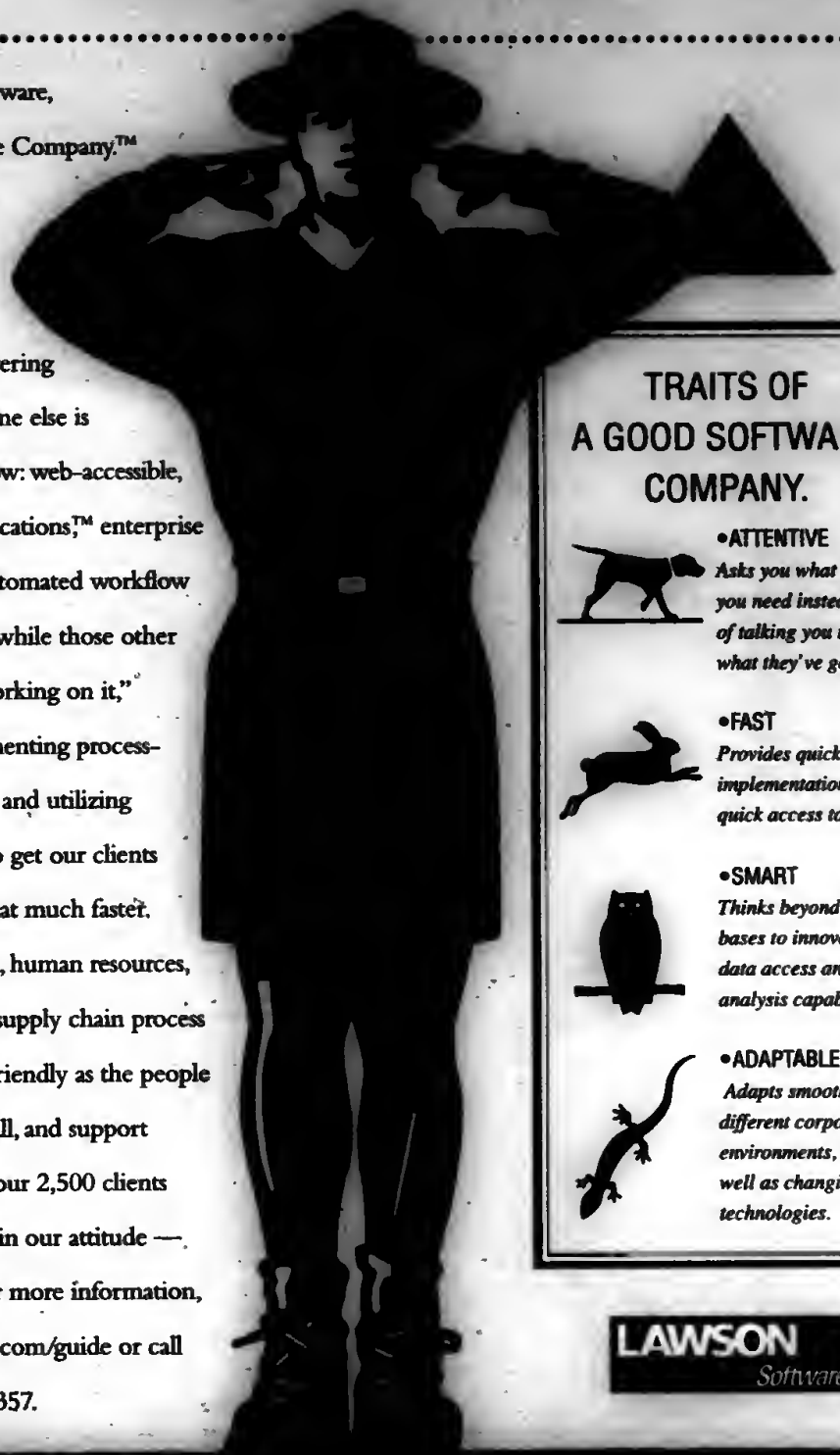

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OPINION

Alternate realities Our front-page story last week jangled a lot of readers' nerves

["Microsoft declares war: Stuns Sun with refusal to ship Java class libraries"]. Many of you have been furiously E-mailing to tell us of your dismay.

"Most IT professionals look at Java as a way of finally trying to get applications to work in harmony on different platforms," wrote one user at a large insurer.

"Microsoft will make its prediction that Java will never be really 'write once, run anywhere' a self-fulfilling prophecy simply by obstructing that goal on Windows platforms," another IS professional glumly noted.

What no one expressed was surprise. Of course Microsoft wants to derail Java's escalating potential as a truly cross-platform development language. Java is the kryptonite that could sap the Superman strength of Windows.

Users and developers are witnessing the desktop giant's struggle with a peculiar form of cognitive dissonance: the uneasy psychological state where two incompatible beliefs collide, driving the sufferer to do whatever it takes to reduce the discomfort. Like creating alternate realities.

When the Internet didn't fit Microsoft's desktop-centric view, for example, corporate users were told to ignore its potential. Oops, change of reality. ("We're hard-core about it now.") When network computers rolled onto the scene, Microsoft officials scoffed. Oops, reality-adjustment time. ("We've got a half-baked NetPC to talk about now.")

With last week's blustering declaration, Microsoft officials stemly reminded their developers that they don't *really* want to write to the Java APIs. ("So we'll make it as difficult as possible for you.")

But as outraged customers and developers make their objections known — and they will — Microsoft will have to respond. So stay tuned. There'll be an alternate reality along any day now.

Maryfran Johnson, executive editor
Internet: *maryfran_johnson@cw.com*

LETTERS

The Ghost of Dilbert Past

IN *Computerworld*'s June "Best Places To Work In IS" supplement, the designation of Price Waterhouse would have made Ebenezer Scrooge proud.

Here's a firm whose practice of trying to let employees spend the weekend at home [whenever possible] is unbelievably passed off as a "lifestyle concern" that is key to retaining IS employees. Perhaps Ebenezer could have enjoyed this distinction had he agreed to purchase the inside cover ad space before Price Waterhouse did. Keep up the good work, and I can stop reading "Dilbert."

T. Conway
Chicago

Anonymous E-mail makes harassment too easy

MICHAEL SCHRAGE'S column in the June 9 *Computerworld* ["Anonymous E-mail fans flames of corporate conflict"] was very thought-provoking.

The role of anonymity is a key question every organization must address, since there is a need for allowing employees to express anonymous comments on corporate policy or issues. Protecting the anonymity of those individuals is a key component in allowing employees the freedom to make candid comments. This can be implemented by having a special discussion group or bot line where anonymous comments can be left to be reviewed by the firm's management.

That said, I believe there is no corporate need to allow employees to send anonymous E-mail to each other. As Schrage points out, the potential for harassment is great. There should be no right to anonymity for personal, one-to-one communications.

Sheldon Laube
Chief technology officer
USWeb Corp.
Santa Clara, Calif.

Year 2000 is no 'big bang'

BRISTLED AT columnist Michael Schrage's editorializing in *Computerworld*'s July 14 issue to "Go for the big bang, but not too often." To me, a revolution is a statement of failure: The current systems don't work. Or, as in the year 2000 issue, they will break soon. Schrage's rationale for year 2000 work was from a standpoint of self-aggrandizement, grabbing the corporate "attention economy." Yell loud for resources only because everyone else is doing it. Where are the business reasons?

Using a sociopolitical analogy to a revolution, a big bang simply replaces one nonfunctioning and ossified system with another. How many companies are taking Schrage's charge to rid themselves of legacy systems with year 2000 issues only to find two years from now that their project timetable is going to slip because they didn't address the right problem?

Bernard Werner
MIS director
Erie Plastics
Corry, Pa.

Columnist's ownership cost figures need reality check

IT MAY BE TOO many years inside the beltway or the dank air, but Paul Strassmann's grumbling about lack of productivity and total ownership cost (TOC) reminds me a lot of Bob Dole: a grumpy old man without a real message. Seeing the TOC figure of $29,100 per client in that column ["To lower ownership costs, manage them better," CW, July 14] stretched the credibility of the whole TOC issue to the breaking point.

So I figured out what my TOC was. My small office is networked, and the equipment is replaced every two or three years. The TOC average for the past three years is less than $1,500 per year per computer — not counting my time as chief LAN, software and systems, administrator; software installer; trainer (for office manager/spouse); and printer cartridge changer.

As we used to say on the farm, that's a load!

As to the argument that the greatest TOC element is the lost productivity from system downtime: As we used to say on the farm, that's a load! If those folks can't find something productive to do when the system is down for 1% to 2% of the working month, then there is a management problem.

John Blair
Carefree, Ariz.

Computerworld welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Maryfran Johnson, Executive Editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number for verification.

Wanna earn $10? Read this column twice

Robert L. Scheier

To: My investors

From: Burned-out entrepreneur

Re: Web communities

OK, I give up on this Web community stuff. I've finally decided that I'll never make it in this business.

It wasn't those long hours in the basement monitoring forums that did me in. (All I had to do, I figured, was wait until this chat attracted enough people to the site so BMW and Budweiser would pay big bucks to advertise.)

The fact that this idea actually works proves I'll never understand this Web community stuff.

And I didn't get too discouraged, even after I found out you need 25 million to 30 million page views per month to even start making money selling ads on your site. Hey, I've still got room left on my credit cards, and my wife hasn't left with the kids — yet.

No, the final straw came when I heard the most ridiculous idea for making money on the Web and found out it actually works. The fact that this idea actually works proves I'll never understand this stuff and should quit trying.

What's the idea? *Pay people to look at ads!* Literally. It's done by this outfit called CyberGold, Inc. out of — where else? — Berkeley, Calif.

I didn't believe it at first, so I checked the company's Web site at *www.cybergold.com*. Right now, you can take your money in real cash or digital cash that lets you buy stuff on the Web. Come September, CyberGold plans to let you credit the money you earned reading ads to your Visa account.

REAL-LIFE USAGE

After I stopped laughing, I called CyberGold and dared the company to show me a real, paying client that had spent money on this ridiculous idea. Well, CyberGold found a customer, and the joke's on me.

The customer spent about $25,000 on a CyberGold campaign and was tickled pink. It's a small distributor of computer monitors that can't afford big TV or print advertising campaigns, so the company was testing CyberGold as an alternative to direct mail.

With direct mail, you pay to rent a mailing list, you pay to write the material, you pay for printing and postage. If you're lucky, you get a 2% to 3% response rate, which you then have to sift through for leads.

Compare that to paying people to read ads on the Web. The advertiser prepares the online ad, pays a fee to CyberGold and sits back. Interested customers find your ad and for $25,000, the advertiser at least knows how many eyes saw it.

Because the company sells through retail, it can't say how many extra sales were made as a result of the promotion. But the leads include a few corporate customers that could make the experiment worthwhile with one big purchase.

But how about mainstream products? Again, this advertiser said the sky's the limit. How about paying a customer $5 to take a virtual test drive in a new minivan on your Web site? Or $5 to watch a promotion about a planned product and answer some questions about it?

A lot of companies are already spending that much and more on promotions without the measurable results you get on the Web.

The more I thought about it, the more depressed I got. I can't figure out this new Web world, and I want to make some real money for a change.

So take back your stock options and send me a trackball. I've got a lot of ads to look at. □

Scheier is Computerworld's senior editor, management.

When extranets go awry

John Gantz

Extranets are hot. Research with lead users by my company indicates that the well-executed deployment of a Web-based application from a company to a community of suppliers or customers can pay immense dividends. We've done case studies where the return on investment of the extranet is so high that we simply can't publish it. Nobody would believe it.

The key word here is well-executed. Now that businesses are gaining more experience with extranets, we're finding out that high ROI is not guaranteed.

The effectiveness of my firm's extranet falls somewhere in the fat part of the bell curve. We launched an extranet this year to deliver our core product — information services — to clients. Now they can get off the Web what they previously could get only on paper or through Notes.

The system works great, the clients that use it like it, and some clients have even modified their internal systems to take advantage of it.

But many clients that could use it don't — for a variety of reasons over which we have little control. Hard experience and the larger body of case research show where some of the flies in the extranet ointment lie:

- **Bad IS at the other end.** Most of the glitches our extranet users experienced are the result of IS inattention at their end. For instance, passwords not given out, desktop configurations that don't fit and inadequate access. Our users have to beg for time and support from their own IS departments.
- **Application scale.** Organizations accustomed to specifying, developing and installing intranet applications across a department find that new rules apply when those applications run across an enterprise, then into a customer base. Software, service contracts, version control — everything is different. Usually neither the department nor IS have much experience with the new kind of application.
- **Internal access.** Extranets, by nature, were designed for outsiders, and in many cases, they gain access to the application before internal employees do. We got our customers signed on to our extranet months before we began to provide access to employees worldwide — because that's where we felt we had the most competitive advantage. Similarly, Federal Express had its shipping application ready for clients before its service and support staff had it.
- **Awareness.** Without continual outreach, an extranet can go unused. It's like any other product — it needs to be marketed, advertised and enhanced. Most IS departments aren't culturally attuned to selling the applications on the open market, which is what has to happen with extranets.
- **User IT literacy.** We find that most of the technical support calls we handle stem from users' lack of familiarity with their computers, browsers and internal systems. With an extranet you have no visibility of or control over end-user IT proficiency.

Clients that could use your extranet won't, for reasons you can't control.

Launching an extranet is a little like giving birth. There's lots of literature on what to do before the baby comes (application development and roll-out) but very little on what to do when the baby's home (generating usage).

Think about how to evangelize your application even as you design the specification. A happy set of beta customers doesn't mean your whole customer base will glom on to the application. And don't be surprised at how many problems you'll have to fix at the customer's end before your extranet is really humming. □

Gantz is senior vice president at International Data Corp. in Framingham, Mass. His Internet address is jgantz@idcresearch.com.

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COMMENTARY

In case you missed it

DAVID MOSCHELLA

HERE'S A RECAP OF recent events, great and small, that happened during this surprisingly active summer.

It's hard to defend huge executive severance packages, but why is Apple's Gil Amelio taking such a presspounding when AT&T's John Walter, who never even became CEO, walked away with $25 million, twice as much as Amelio for a similar length assignment? Lest we think that platinum parachutes are unique to our industry, remember that last year Michael Ovitz was handed $100 million on

his way out the door at Disney. Few issues make the free market system seem more unfair, even rigged.

And for those who prefer their numbers in the billions: Everyone knows that Bill Gates is now the world's richest businessman, but has there ever been anyone who has earned so much by doing as little as Microsoft's long-retired co-founder, Paul Allen, now ranked 7th and worth more than $15 billion? The computer industry, by the way, placed 18 members on the recent *Forbes* list of 200 global billionaires.

IBM'S BLUES

Consistently lost within IBM's solid second-quarter financials is the dismal performance of its enterprise PC business. Its corporate market share is plummeting, and its customer satisfaction ratings are less than mediocre. That nobody on Wall Street seems to care just reinforces the view that IBM is now a services company that also sells a lot of mainframes and AS/400s. Lou Gerstner also appears indifferent; he just promoted Bob Stephenson, who had ultimate responsibility for PCs, to the even more important job of running the mainframe and minicomputer division.

But for real confusion in the PC business, try Compaq. Does anybody actually understand Compaq's description of how it can sell both direct and through channels? The company's tangled statements remind me of the managed-competition rhetoric of the Clinton health care plan.

BIG BUYOUT

On a related note, with the direct model for PC sales looking so powerful, both Gateway and Micron are certainly acquisition targets for those who like to buy high. But if anyone is going to step up and overpay, it probably won't be one of today's major PC players — IBM, Compaq or Toshiba.

It would be much easier for someone without all their product and channel baggage.

Of course, Compaq isn't the only company talking out both sides of its mouth. Did you see Sun's recent ad in the *Wall Street Journal* urging any customers planning a migration to NT workstations to first check out the virtues of Solaris desktops? Whatever happened to thin clients? Sun, of course, deserves a special chutzpah award for its ability to so quickly and effectively change even its most basic messages.

Meanwhile, Microsoft made Internet audio leader, Progressive Networks, an offer it couldn't refuse, taking a 10% share and essentially eliminating one of its more interesting competitors. Microsoft has also, as predicted in this column, indicated that it will scale back its content efforts a bit. That's bad news for the anti-Redmond forces, who could always find comfort in watching Microsoft suffer. □

Moschella is senior vice president of research at Computerworld, Inc. His Internet address is david_moschella@cw.com.

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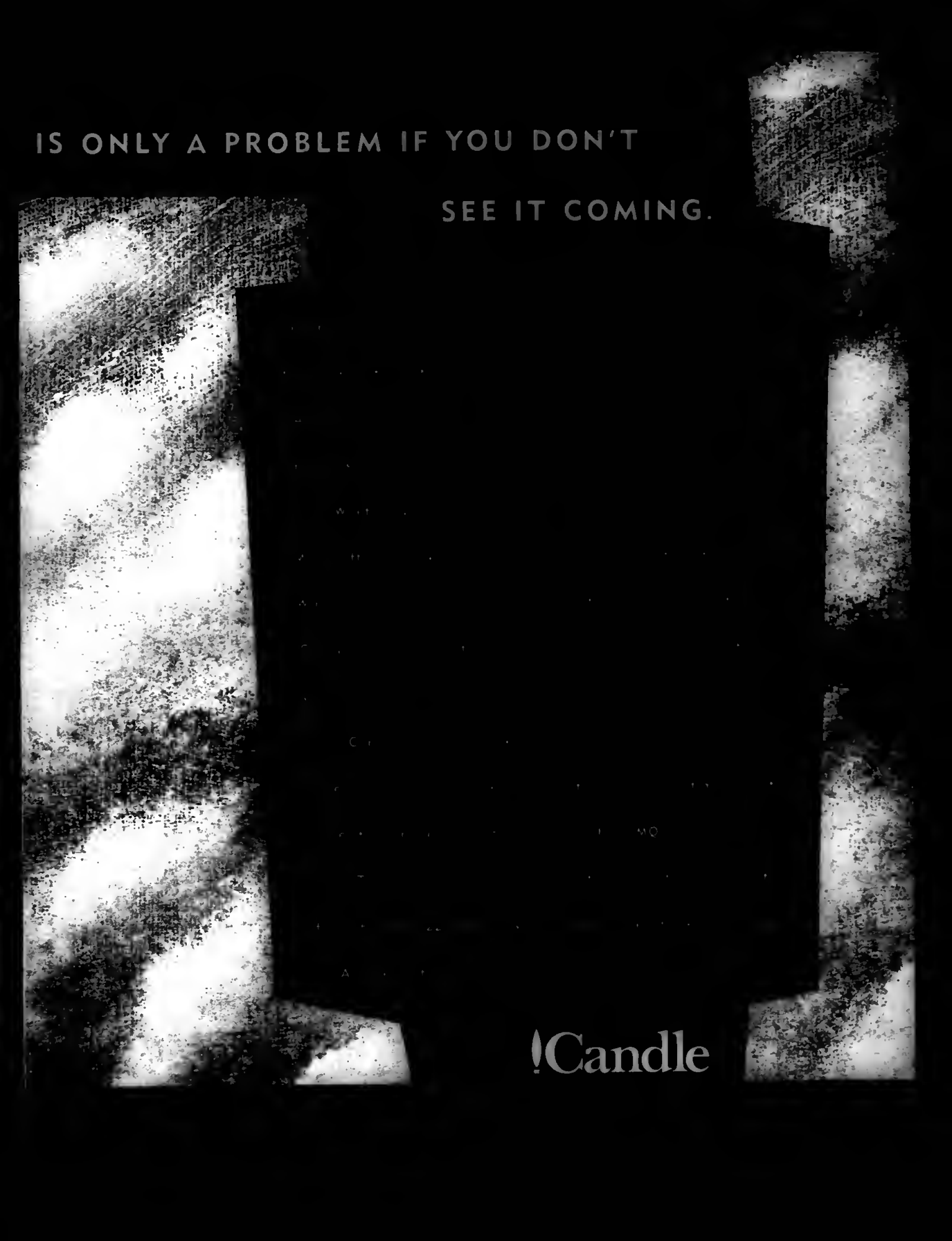
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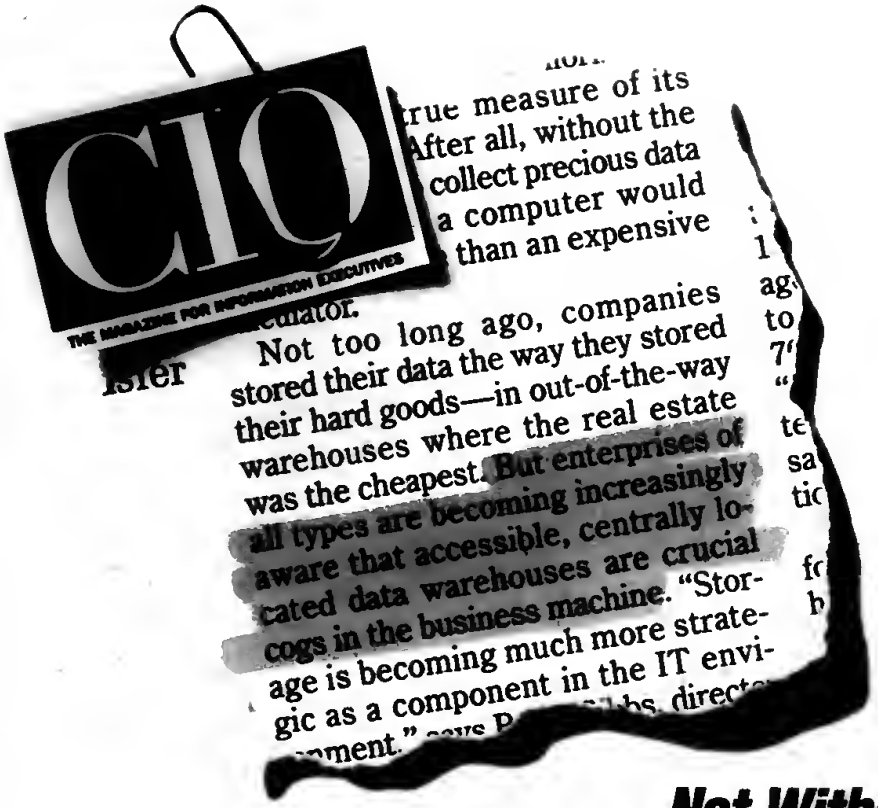
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Briefs

GLIEDMAN'S LAW OF FINGER-POINTING

"The number of phone calls required to solve a multivendor support problem is the square of the number of vendors involved."

— Chip Gliedman, analyst, Giga Information Group, Cambridge, Mass.

Citibank goes virtual

Citibank in New York inked a multiyear deal to use The Mining Co.'s "virtual community" model to electronically link its banking customers with product information and other people over the Internet. The Mining Co. is expected to spend four to six months developing a prototype of virtual communities around Citibank's products and services. It will use bulletin boards, chat rooms and electronic mail.

30 buys Alpha systems

The Department of Veterans Affairs is upgrading 100 medical centers with hospital information systems based on Digital Equipment Corp.'s AlphaServer. The $26 million purchase is for clinical and administrative information systems. Each installation calls for as many as eight of Digital's AlphaServer 2000A systems and OpenVMS clusters.

Sim software licensed

Chevron Research and Technology Co. signed a $500,000 contract to license Pro/II software from Simulation Sciences Inc. in Brea, Calif. The Windows-based software lets engineers simulate the flow of materials and energy through their company's plants.

Analyst report

Gartner Group Inc. issued a report to help companies select external service providers. "Guidelines for Choosing and Negotiating with Consultants and Systems Integrators" can be purchased at www.gartner.com/forbin/topsupp.html.

Web helps firms go with the workflow

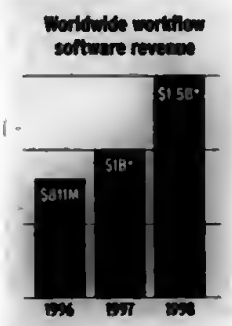
By Barb Cole-Gomolski

EVEN BEFORE IT had its first customers, a San Francisco-based medical services start-up had plans to implement workflow software.

HiLife, Inc. enrolls patients in classes, monitors their conditions and reports the results to physicians or medical groups. HiLife's business depends on taking information — entered by patients via the telephone or the World Wide Web — and moving it efficiently among nurses, doctors and patients.

"For us, workflow must exist across all our applications," said Jack Lakes, a senior staff engineer at HiLife, which hopes to eventually take its business nationwide. The company is prototyping applications that handle tasks such as routing nurses' time cards and enrolling patients.

HiLife is among a growing group of companies that want to make workflow a component of a wide breadth of applications. The push is fueled by the fact that sites now can overlay workflow on existing applications, such as accounting, order processing and messaging systems.



Workflow products, once rigid and lacking links to operational systems, now can be easily modified and integrated with

Workflow, page 42

CASE STUDY

Bank cashes in by merging IT systems

By Kim Girard

AS VACATIONERS lounged over Memorial Day weekend, BankBoston Corp.'s information systems staff was busy moving customer accounts to a merged system shared with newly acquired BayBank, Inc.

That meant consolidating the front-end customer transaction system and sales and service systems used by tellers, the accounting staff and the sales force, said Kevin Roden, direc-

Bank, page 42

Labor drought spurs flood of disaster outsourcing

Many Alabamanians struggled in the wake of Hurricane Danny, but companies that outsourced data recovery stayed high and dry

TOM GILLESPY

By Thomas Hoffman

WHEN HURRICANE DANNY whipped through the Gulf Coast late last month and dumped 30 inches of rain on Mobile, Ala., Robert Tuttle was dry and unfazed. The data processing manager at Mobile Gas Service Corp. could focus on the natural gas utility's operations without having to worry about power outages or floods disrupting his company's information systems.

Others were less fortunate, as the storm damaged about 500 homes and businesses in the area.

Disaster, page 42

FCC improves access via the 'net

▸ *Public comment files to go online by year's end*

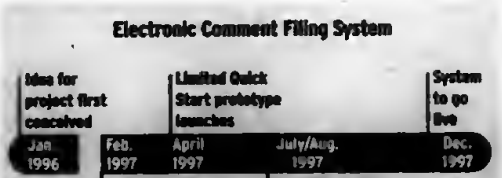
By Sharon Machlis

WHEN A CONSUMER makes his opinion known to the FCC, a paper document usually has to be indexed and scanned into a 5-year-old imaging system.

But by year's end, the agency plans to launch a system that will let people file comments via a form on the World Wide Web. That system is expected to save staff time and offer the public increased access and convenience.

The Electronic Comment Filing System also will have 1.2 million pages from its files available on the Internet in what officials at the Federal Communications Commission said could be the largest Sybase, Inc. database ever to be accessible to the public.

"We became enamored" with the Web's "ease of use and ease of reaching out to the public," said Sheryl Segal, information technology manager at the FCC.



In the short run, the system should increase public participation in the comment-filing process, Segal said. In the long

FCC, page 44

Corporate Strategies

Case Studies • Trends • Outsourcing

Briefs

GLIEDMAN'S LAW OF FINGER-POINTING

"The number of phone calls required to solve a multivendor support problem is the square of the number of vendors involved."

— *Chip Gliedman, analyst, Giga Information Group, Cambridge, Mass.*

Citibank goes virtual

Citibank in New York inked a multiyear deal to use The Mining Co.'s "virtual community" model to electronically link its banking customers with product information and other people over the Internet. The Mining Co. is expected to spend four to six months developing a prototype of virtual communities around Citibank's products and services. It will use bulletin boards, chat rooms and electronic mail.

VA buys Alpha systems

The Department of Veterans Affairs is upgrading 100 medical centers with hospital information systems based on Digital Equipment Corp.'s Alpha chip. The $26 million purchase is for clinical and administrative information systems. Each installation calls for as many as eight of Digital's AlphaServer 1000A systems and OpenVMS clusters.

Sim software licensed

Chevron Research and Technology Co. signed a $900,000 contract to license Pro/II software from Simulation Sciences, Inc. in Brea, Calif. The Windows-based software lets engineers simulate the flow of materials and energy through their company's plants.

Gartner report

Gartner Group, Inc. issued a report to help companies select external service providers. "Guidelines for Choosing and Negotiating with Consultants and Systems Integrators" can be purchased at *www.gartner.com/hotc/espo497.html*.

Web helps firms go with the workflow

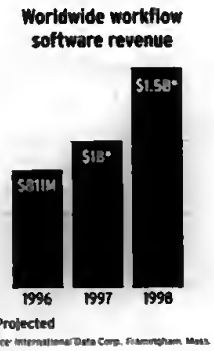
By Barb Cole-Gomolski

EVEN BEFORE IT had its first customers, a San Francisco-based medical services start-up had plans to implement workflow software.

HiLife, Inc. enrolls patients in classes, monitors their conditions and reports the results to physicians or medical groups. HiLife's business depends on taking information — entered by patients via the telephone or the World Wide Web — and moving it efficiently among nurses, doctors and patients.

"For us, workflow must exist across all our applications," said Jack Lakes, a senior staff engineer at HiLife, which hopes to eventually take its business nationwide. The company is prototyping applications that handle tasks such as routing nurses' time cards and enrolling patients.

HiLife is among a growing group of companies that want to make workflow a component of a wide breadth of applications. The push is fueled by the fact that sites now can overlay workflow on existing applications, such as accounting, order processing and messaging systems.



Workflow products, once rigid and lacking links to operational systems, now can be easily modified and integrated with

Workflow, page 42

CASE STUDY

Bank cashes in by merging IT systems

By Kim Girard

AS VACATIONERS lounged over Memorial Day weekend, Bank Boston Corp.'s information systems staff was busy moving customer accounts to a merged system shared with newly acquired BayBank, Inc.

That meant consolidating the front-end customer transaction system and sales and service systems used by tellers, the accounting staff and the sales force, said Kevin Roden, direc-

Bank, page 42

Labor drought spurs flood of disaster outsourcing

Many Alabamanians struggled in the wake of Hurricane Danny, but companies that outsourced data recovery stayed high and dry

By Thomas Hoffman

WHEN HURRICANE DANNY whipped through the Gulf Coast late last month and dumped 30 inches of rain on Mobile, Ala., Robert Tuttle was dry and unfazed. The data processing manager at Mobile Gas Service Corp. could focus on the natural gas utility's operations without having to worry about power outages or floods disrupting his company's information systems.

Others were less fortunate, as the storm damaged about 500 homes and businesses in the area.

Disaster, page 42

FCC improves access via the 'net

▸ *Public comment files to go online by year's end*

By Sharon Machlis

WHEN A CONSUMER makes his opinion known to the FCC, a paper document usually has to be indexed and scanned into a 5-year-old imaging system.

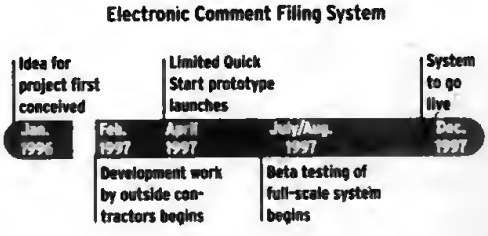
But by year's end, the agency plans to launch a system that will let people file comments via a form on the World Wide Web. That system is expected to save staff time and offer the public increased access and convenience.

The Electronic Comment Filing System also will have 1.2 million pages from its files available on the Internet in what officials at the Federal Communications Commission said could be the largest Sybase, Inc. database ever to be accessible to the public.

"We became enamored" with the Web's "ease of use and ease of reaching out to the public," said Sheryl Segal, information technology manager at the FCC.

In the short run, the system should increase public participation in the comment-filing process, Segal said. In the long

FCC, page 44



Disaster recovery gets outsourced

CONTINUED FROM PAGE 41

While other Mobile-area businesses struggled to keep their systems humming with skeletal IS crews, it was business as usual at Mobile Gas. The firm outsources its disaster recovery and planning functions to IBM under a three-site deal.

Although the utility didn't have to call on IBM during the storm, the arrangement helped Mobile Gas keep its head above water "and free up our staff to focus on day-to-day operations," Tuttle said.

The industrywide skills crunch is forcing IS crews across the country to juggle multiple responsibilities. As a result, experts said, more organizations are beginning to outsource specific IS functions that historically have been retained in-house, such as disaster recovery planning.

Companies are under pressure to keep costs down and run their organizations with thin staffs. "But the workload doesn't go away, so it's necessary for them to outsource more of their IT functions," said Christopher Hoffman, an analyst at International Data Corp. in Framingham, Mass.

Several factors are contributing to an increase in disaster recovery outsourcing. In some cases, companies are outsourcing disaster recovery services instead of hiring a contingency planning expert and paying that person full benefits, said Lee Adler, president of Contingency Planning Research, Inc., a management consultancy in Livingston, N.J.

"It's also tough [for user organizations] to find qualified people," Adler said.

Lennox International, Inc. has managed to keep its disaster recovery planning in-house since its information services team "has pretty much stayed intact," said John G. Stevenson, vice president of information technology at the Dallas-based heating and air conditioning manufacturer.

But the company is collaborating more with its client/server hardware and software vendors, Stevenson said. Those vendors have detailed knowledge about how best to recover their products in the wake of a disaster, he said.

The skills shortage has been a boon for services vendors. For example, Hewlett-Packard Co. just introduced a set of Windows NT recovery services, including a 24-hour hardware replacement service for HP and Intel Corp.-based equipment. Analysts said such services will be helpful to organizations whose NT environments are overseen by line managers with little to no contingency planning experience. □

AVERAGE FINANCIAL IMPACT OF COMPUTER DOWNTIME IN FOUR SECTORS

	Transportation	Financial	Retail	Entertainment
Business operation	Airline reservation centers	Retail brokerage	Catalog sales centers	Pay-per-view services
Hourly cost	$89,500	$6.45 million	$90,000	$150,000

Source: Contingency Planning Research, Inc., Livingston, N.J.

BankBoston merges IT systems

CONTINUED FROM PAGE 41

tor of technology and deposit services at BankBoston, the merged company that employs 23,413 people worldwide and has assets of $66 billion.

"The trick was to share data between the two of them" so bank employees could easily cross-check customer information, add services to an account or open accounts on one system, Roden said.

Employees at the premerger, corporate account-focused Bank of Boston worked on Pentium-based PCs with 32M bytes of RAM running IBM's OS/2 operating system. The PCs, distributed in numerous branches, talked to a central site over TCP/IP.

Meanwhile, BayBank, a consumer-focused bank known for its ubiquitous automatic teller machines (ATM), used an old NCR Corp. tower system and ran a DOS-based teller system on the desktop. Tellers and salespeople accessed information from a mainframe.

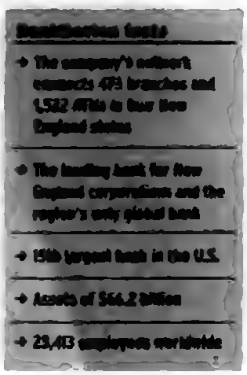
One analyst said it cost between $15 million to $20 million to make the banks' systems work together, an amount that included investment in new servers and about 3,000 new PCs at BayBank branches and call centers. The PCs, installed during a four-month period before the Memorial Day conversion, replaced old AT&T Corp. 286-based machines, said Joe Paulantonio, BankBoston's senior delivery systems manager.

To get the two systems to share information, BankBoston converted BayBank to Argo Data Resource Corp.'s bank service tool that BankBoston tellers already used on the desktop. The banks use a cross-selling tool to access account information. The tool has been integrated to work with the Argo platform. BankBoston retained its OS/2 platform within the client/server environment.

BankBoston officials said the merger meant taking the best systems and products from each company. They kept BayBank's ATMs, technology and consumer banking offerings and retained Bank of Boston's operating system and hardware.

BankBoston officials wouldn't comment on any IS staff cuts made as a result of the merger, but analysts estimated that the average company will save up to 40% in information technology spending when acquiring another company. Often, though, the company spends any extra money to reinvest in new technology. For banks, those investments include improving ATMs, home banking technology and sales tools. BankBoston plans to invest some of its savings in preventing year 2000 computer glitches.

"I think in terms of basic systems, BankBoston is competitive with other banks in their arena," said Bob Landry, an analyst at The Tower Group in Newton, Mass. But BankBoston, like all banks that aim to stay competitive, must better identify its more profitable customers and decrease its per customer costs by taking advantage of technology such as ATMs, he said. ATMs, which are intended to cut bank expenses, typically cost the bank 40 cents per transaction, compared with the $1.40 per teller transaction. □


Bankboston facts
→ The company's subsidiary connects 493 branches and 1,522 ATMs in four New England states
→ The leading bank for New England corporations and the region's only global bank
→ 15th largest bank in the U.S.
→ Assets of $66.2 billion
→ 23,413 employees worldwide

Workflow

CONTINUED FROM PAGE 41

existing systems. And with hooks to Web browsers, it is more feasible to include a lot of workers, customers and suppliers in a workflow application, users said.

MANY USES

The payback is that workflow, which speeds up tasks, can be applied in areas such as manufacturing, purchasing and engineering change orders, users said.

For example, when a missile launcher on a U.S. Navy nuclear submarine needs repairs, a workflow application can deliver to engineers the information they need to develop a fast fix.

"We're trying to automate as much of the [repair] process as possible," said Bob Crowder, a consultant at Information Systems Professionals in Camarillo, Calif., which is helping to design the workflow application for naval bases in Bremerton, Wash., and Kings Bay, Ga. The application will ride atop the Navy's Microsoft Corp. Exchange messaging system.

Until recently, there hasn't been an environment in which to build these widespread workflow applications, said Nathaniel Palmer, a senior consultant at Boston-based Delphi Consulting Group, Inc. But some clear models are emerging, he said.

For example, Nashua, N.H.-based Keyfile Corp. offers Keyflow, a workflow engine that works with Exchange and can be used to develop a series of workflow applications. And several companies have added Web hooks to their workflow engines, which lets companies turn workflow "on and off at the desktop," Palmer said.

Other user sites, such as Global Marine, an offshore drilling company in Houston, are turning to applications providers for workflow.

Jeff Musick, manager of desktop systems at Global, said the company plans to automate a time-sheet application when its applications vendor, PeopleSoft, Inc., beefs up its workflow support in its next release. □

Report: Encryption policy hurts trade

By Elizabeth de Bony
BRUSSELS

U.S. CONTROLS on the export of encryption technology and telecommunications equipment represent significant barriers to international trade, the European Commission said in a report last week.

The development of digital communications has prompted the need for improved protection against the unauthorized use of personal data, trade secrets, banking information and databases. Without that protection, it is unlikely that electronic commerce will take off, said one European Commission official.

The commission's 13th annual "Report on United States Barriers to Trade and Investment" said the U.S. is the dominant supplier of key computing components, and the country's limitations on the export of strong encryption products hurts the growth of electronic commerce. □

De Bony writes for the IDG News Service in Brussels.

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FCC improves public access via the Web

CONTINUED FROM PAGE 41

run, the commission believes it will save staff time as more people send documents electronically.

Contractors from Dyncorp Information and Engineering Technology in Reston, Va., are converting 40G bytes of documents from the FCC's imaging system, now in Tagged Image File Format, into Portable Document Format (PDF) for the Web. Beta testing is slated to begin within a month.

The system will use SPARC-based hardware from Sun Microsystems, Inc., server software from Netscape Communications Corp., database software from Sybase and whichever browser is on the client machines that surf into the site, said John Soscia, an independent contractor working with Dyncorp on the project.

Internet surfers won't have access to the actual core database, which will remain behind a firewall. Instead, the system will request a document copy from the database, which will be sent to the user.

PROMISES KEPT

With about two-thirds of the coding done, Soscia said the project's software tools are working as advertised — including Sybase's Web SQL to develop forms and Acrobat Capture 2.0 from Adobe Systems, Inc. in San Jose, Calif., to convert to PDF.

The big software challenge so far has been with Hypertext Markup Language (HTML) standards, he said. The agency needs a specialized HTML tag so the public can send and receive FCC forms and data. Although Netscape's Navigator recognizes this special tag, other browsers don't.

"For the public to send us a binary stream, we need that tag," Soscia said. He said his group is consulting with Microsoft on the matter. The tag is also pending before the Internet community as request-for-comment case No. 1867 from the Internet Engineering Task Force as a possible new standard. □

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Sept. 29	White Paper: Remote Access Distribution at SIM Fall Conference & Networld + Interop	Aug. 15	Sept. 5

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COMPUTERWORLD

Filipinos train coders to tackle year 2000

By Glenda G. Venturanza
MANILA

A $122 MILLION government drive to train programmers to fix the year 2000 bug was scheduled to produce its first graduates last month.

William Padolina, the Philippines secretary of science and technology, said the program will help local software companies develop the skills needed to meet international demand for year 2000 conversion services. The goal of the project is to train 100,000 programmers in the next year so Filipino companies can capture a percentage of the worldwide market for conversion services.

The first batch of programmers underwent two and a half months of training at the Asia Pacific College using a curriculum that includes Cobol. The curriculum was worked out by the three software houses that will hire the graduates. Padolina declined to identify the firms.

Johnny Sy, general manager at First Philippine Software Corp., said the $1,220 budget for each person is "cheap" compared with the money needed to find the experienced skills. He said the money will go to the training institution and the trainee's allowance.

Sy said the first group won't reach the 100-person target. "We expect that not all of them will be selected," Sy said. "Right now, there are already dropouts." □

Venturanza writes for Computerworld Philippines.

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●	Compaq	Proliant 6000 o/s	10,665.53	$55	6/Pentium Pro/200MHz
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

	ALR Revolution 6X6	Compaq Proliant 6000
CPU	[illegible]	[illegible]
Maximum No. of Processors	6	4
Memory	[illegible]	[illegible]
Hard Disk Drive Storage	[illegible]	9-Gigabyte (FW/SCSI)
LCD Touchscreen Diagnostics	[illegible]	Not Available
CD-ROM	[illegible]	8X (SCSI)
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Hot Swappable Expansion	[illegible]	6 Bays (1.6)
Network Interface	[illegible]	10/100 Ethernet
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Redundant Hot-pluggable N+1	[illegible]	Optional
On-site Service	3 Years On-site Service	3 Years On-site Service
Factory Warranty	[illegible]	3 Year
IDC Estimated Street Price	[illegible]	13,431

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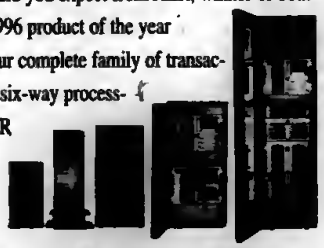

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The Internet

Electronic Commerce • The World Wide Web • Intranets

Briefs

Internet kiosk

Accom/Info in San Diego plans today to introduce an Internet kiosk designed to fit into a standard telephone booth. Internet kiosks are used in airports, convention centers, hotel lobbies and other public places as a way to check electronic mail and the World Wide Web while on the road. Existing Internet kiosks are large, freestanding structures. The model from Accom/Info was designed to be less conspicuous.

Web preview tool

NetObjects Corp. has announced WebThumb, a tool designed to allow users to preview Web pages before downloading them. The preview summarizes a page, allowing users to get a sense of what the page is about before downloading the full text and graphics.

The software is free but comes with advertising displays sold by NetObjects. The tool works as a plug-in for Netscape Communications Corp.'s Navigator or Microsoft Corp.'s Internet Explorer client. It is available at www.netobjects.com.

Censoring E-mail

Security [illegible] Inc. in Sugar Grove, Ill., today plans to introduce software that censors incoming and outgoing E-mail, Web pages and Windows documents such as spreadsheets and word processing files. Cyber Sentinel was designed primarily to screen out pornography, but can also be used to control distribution of credit-card numbers and proprietary corporate information. The software scans built-in libraries of objectionable phrases that users can define.

The software can warn users when it encounters objectionable material or can be set to operate in "stealth mode," in which it simply logs inappropriate content to a database.

Spiegel learns by trial and error

By Kim S. Nash
Downers Grove, Ill.

THE MAD WEB SCIENTISTS at Spiegel, Inc. have spent more than two years experimenting with electronic commerce, trying different advertising schemes, design ideas and merchandise mixes.

ELECTRONIC COMMERCE

Now they are ready to make money.

An all-volunteer staff — which has ranged from two to 20 people over the past two years — launched Spiegel's first online store in February 1995. But the World Wide Web team only last month got its first official full-time employee. A redesigned version of the site was slated to appear last Friday.

Most of the skunkworks group of technical, marketing, advertising and other employees will continue to squeeze online projects in between their formal duties at the 90-year-old paper catalog. Spiegel peddles everything from chic designer suits to low-priced denim shorts, plus housewares.

But a first-ever formal business plan submitted to management late last month means that *www.spiegel.com* will finally get financial backing.

The biggest lesson in all this trial and error? E-commerce demands enormous patience.

"You've got to go ahead and try different things to know what works. If we just sat here, we wouldn't have known a thing about how to make a Web site work, but now we do," said Randy Heiple, division vice president of catalog advertising production.

Don't misunderstand. Spiegel is no Dell Computer Corp., whose site does $1 million worth of business per day. But the cataloger does expect to pull down a profit for fiscal 1998, Heiple said. (Officials declined to say how much.)

But the fact that Spiegel has stayed up and running this long and continues to take in sales is a feat compared with the many

Spiegel, page 48

STEVE O'BROOK

Extranet aids in insurance sales

By Mitch Wagner

IN AN INDUSTRY that has been reluctant to adopt Internet technology, Allmerica Financial Corp. is taking the lead with a three-state extranet to help business partner First of America Bank Corp. sell Allmerica insurance.

Bank-employed sales agents at 600 First of America branches in Michigan, Illinois and Indiana dial in to Allmerica servers over the Internet to receive updated information on insurance rates and terms and to sign up sales prospects for insurance.

About 60 agents use the extranet, which was launched in May, and that number is expected to increase to about 125 by year's end.

"What we're getting out of this is the ability to manage our sales force more effectively," said Richard H. Phillips, a vice president at First of America Insurance Group, a unit of First of America in Kalamazoo, Mich. "If you send them out the information on a disk, they just throw it into a desk drawer until it's too late. But if the application is loaded on the Internet, they're always dealing with the most current information."

The extranet project was conceived in January by Worcester, Mass.-based Allmerica as a means of getting closer to customers. Consumers usually don't seek out insurance information, and salespeople have difficulty arranging meetings with prospects to sell them insurance.

The goal for Allmerica was to put sales information, stored on Oracle Corp. databases that run on Sun Microsystems, Inc. servers, into places where people are already thinking about finance — such as banks, said John Peterson, an electronic-commerce staff member at Allmerica and an information systems manager involved in setting up the project.

"We had a business need to be able to provide information and transactional capability to remote agents that are connected to banks," Peterson said.

Agents can receive online training in using the system

Extranet, page 48

IS not jumpy about bugs in browsers

By Carol Sliwa

ARE YOU GETTING the impression that a new browser bug is discovered just about every week?

Although some information systems managers are starting to feel that way, they aren't exactly pressing the panic button and ripping out the troublesome clients in response.

"I haven't seen a patch yet that's an earthshaking patch," said Louis Dumser, manager of communication application technologies at UniHealth, a Burbank, Calif.-based holding company for hospitals, medical groups, insurance companies and home health care organizations.

FIREWALL-PROTECTED

Given the way his company uses browsers, Dumser isn't overly concerned about bugs. Employees can access some company information over an intranet, but it is behind a firewall in a protected internal network. And sensitive data isn't being transmitted over the Internet, he said.

The latest browser bug, affecting the new Communicator client from Netscape Communications Corp., can permit a Java

Browser bugs, page 48

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Now they are ready to make money.

An all-volunteer staff — which has ranged from two to 20 people over the past two years — launched Spiegel's first online store in February 1995. But the World Wide Web team only last month got its first official full-time employee. A redesigned version of the site was slated to appear last Friday.

Most of the skunkworks group of technical, marketing, advertising and other employees will continue to squeeze online projects in between their formal duties at the 90-year-old paper catalog. Spiegel peddles everything from chic designer suits to low-priced denim shorts, plus housewares.

But a first-ever formal business plan submitted to management late last month means that *www.spiegel.com* will finally get financial backing.

The biggest lesson in all this trial and error? E-commerce demands enormous patience.

"You've got to go ahead and try different things to know what works. If we just sat here, we wouldn't have known a thing about how to make a Web site work, but now we do," said Randy Heiple, division vice president of catalog advertising production.

Don't misunderstand. Spiegel is no Dell Computer Corp., whose site does $1 million worth of business per day. But the cataloger does expect to pull down a profit for fiscal 1998, Heiple said. (Officials declined to say how much.)

But the fact that Spiegel has stayed up and running this long and continues to take in sales is a feat compared with the many

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The fastest-moving merchandise sold on the Web has been items customers know well such as bed linens, shoes and underwear.
– Barbara Vaughn, Spiegel, Inc.

Extranet aids in insurance sales

By Mitch Wagner

IN AN INDUSTRY that has been reluctant to adopt Internet technology, Allmerica Financial Corp. is taking the lead with a three-state extranet to help business partner First of America Bank Corp. sell Allmerica insurance.

Bank-employed sales agents at 600 First of America branches in Michigan, Illinois and Indiana dial in to Allmerica servers over the Internet to receive updated information on insurance rates and terms and to sign up sales prospects for insurance.

About 60 agents use the extranet, which was launched in May, and that number is expected to increase to about 125 by year's end.

– "What we're getting out of this is the ability to manage our sales force more effectively," said Richard H. Phillips, a vice president at First of America Insurance Group, a unit of First of America in Kalamazoo, Mich. "If you send them out the information on a disk, they just throw it into a desk drawer until it's too late. But if the application is loaded on the Internet, they're always dealing with the most current information."

"We had a business need to be able to provide information to remote agents connected to banks."
– John Peterson, Allmerica

The extranet project was conceived in January by Worcester, Mass.-based Allmerica as a means of getting closer to customers. Consumers usually don't seek out insurance information, and salespeople have difficulty arranging meetings with prospects to sell them insurance.

The goal for Allmerica was to put sales information, stored on Oracle Corp. databases that run on Sun Microsystems, Inc. servers, into places where people are already thinking about finance — such as banks, said John Peterson, an electronic-commerce staff member at Allmerica and an information systems manager involved in setting up the project.

"We had a business need to be able to provide information and transactional capability to remote agents that are connected to banks," Peterson said.

Agents can receive online training in using the system

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IS not jumpy about bugs in browsers

By Carol Sliwa

ARE YOU GETTING the impression that a new browser bug is discovered just about every week?

Although some information systems managers are starting to feel that way, they aren't exactly pressing the panic button and rippiog out the troublesome clients in respoose.

"I haven't seen a patch yet that's an earthshaking patch," said Louis Dumser, manager of communicatioo application technologies at UniHealth, a Burbank, Calif.-based holding company for hospitals, medical groups, insurance companies and home health care organizations.

FIREWALL-PROTECTED

Given the way his company uses browsers, Dumser isn't overly concerned about bugs. Employees can access some company information over an intranet, but it is behind a firewall io a protected ioternal network. And sensitive data isn't being transmitted over the Internet, he said.

The latest browser bug, affecting the new Communicator client from Netscape Communications Corp., can permit a Java

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Browser bugs

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applet to transmit an end user's Internet activities to the point of picking up any personal data they transmit to a World Wide Web site. A tiny browser launches when the user hits the malicious Web site, and the nearly invisible browser stays active when the user visits other sites (see chart).

Earlier last month, a JavaScript flaw permitted a Web author to do similar user tracking in Communicator, Navigator 2.x and 3.x and Microsoft Corp.'s Internet Explorer 3.x browser and 4.0 platform preview.

Other bugs have allowed Web site operators to access some files on a user's hard drive, but operators with ill intent typically have to have sophisticated knowledge, such as the name and location of a user's file.

"If you read Netscape's take on it, there are no documented cases where these have actually been exploited. So the risk is small in my view," said Glenn Newell, senior engineering manager of intranet technology at National Semiconductor Corp. in Santa Clara, Calif.

In a worst-case scenario, Newell said he can envision preventing employees from using their browsers outside the firewall. But that's hard to imagine, he said.

GETTING THE WORD OUT

For the current rash of bugs, National Semiconductor keeps its users informed through postings to an internal newsgroup and listserver.

Schlumberger Ltd., an international oil field services and manufacturing company, takes a similar approach. Information about serious bugs is blasted out via electronic mail. Schlumberger's employees install their own browsers, so they must download bug fixes themselves if they think they need them, said David Sims, Schlumberger's technical manager for information technology.

"Left to their own initiatives, people want to do the right thing," Sims said. "So if you make them aware of the inherent risks, then they'll behave properly. If someone doesn't pay attention and it wipes out their disk, they'll learn."

Sims, who works at Schlumberger's Sugar Land, Texas, office, said he keeps a "virtual head count" of employees who enjoy helping others. Those employees, spread throughout the company's divisions worldwide, tend to assist other employees who experience difficulty.

Most Schlumberger users have been told to disable Java in their browsers, for instance.

"Historically, there have been issues with Java," Sims said. "We don't have a lot of internal Java applications, so it doesn't do anything to turn Java off. As problems are resolved, we tell them the problem's resolved." □

RECENT BROWSER BUGS

	Problem	Affected software	Recommended fix
Shopper Privacy Bug	A malicious Java applet that runs in a tiny browser can transmit a user's Web activity	Communicator 4.x	Communicator 4.02
Bell Labs Privacy Bug	Using JavaScript, a Web site author can operate a tiny browser that monitors a user's Internet activities	Navigator 2.x and 3.x, Communicator 4.01, Internet Explorer 3.x and Internet Explorer 4.0 Platform Preview 1	Navigator 3.02, Communicator 4.01A, Internet Explorer 3.02 and Internet Explorer 4.0 Platform Preview 2
Danish Privacy Bug	Web site operators can access files on a user's hard drive if the operator knows the names and locations of files	Navigator 2.x and 3.x and Communicator 4.0	Navigator 3.02 and Communicator 4.01

Spiegel's E-commerce

CONTINUED FROM PAGE 47

online commerce sites that have folded in the past three years.

"To date, mere survival has been the most used measure of success," said David Strom, president of David Strom, Inc., a consulting firm in Port Washington, N.Y.

Much of the credit goes to an adventurous attitude.

Take advertising. Spiegel's first ads were in print, in *The Wall Street Journal* and *Yahoo Internet Life* magazine. Online spots soon followed on the Web sites for Women's Wire, Netscape Communications Corp. and Excite, Inc.'s search engine.

What worked and what flopped surprised Spiegel.

"The number of people going from surfer to buyer from Netscape was zero," Heiple said. Spiegel soon withdrew banners from Netscape's site.

But ads on Women's Wire (*www.women.com*), a Web page and forum dedicated to women, drew sales.

Still, Spiegel's virtually all-female customer base may be a liability because Internet users are mainly men, according to Mary Meeker, an analyst at New York brokerage firm Morgan Stanley & Co.

And apparel sites have been slower to spark sales than those for books, music and computer products, Meeker said. That is partially because online graphics don't look as nice as, say, pictures in paper catalogs.

Some design techniques used in the paper catalog don't translate to Web pages. The paper version, for example, uses two-page spreads to show a whole bedroom scene, where several items depicted are for sale.

"But putting a bedroom in a 2-in. window on screen wouldn't be easy," said Barbara Vaughan, who, as Internet sites manager, became Spiegel's first permanent Web worker last month.

Such an image would look cramped and busy. So the items Spiegel offers online are generally pictured by themselves — a model wearing a dress, a pair of shoes floating in space.

So far, the fastest-moving merchandise has been items customers know well. Bed linens, shoes and underwear, for example, come in standard sizes and materials that customers are familiar with.

Spiegel also has learned to tiptoe around the wishes of some of its manufacturers. A large West Coast computer and video game maker, for example, doesn't want its products promoted at Spiegel's site because it wants any online buyers to come to its own home page.

Others, Vaughan said, don't want their products on the Web at all.

"They don't want [customers from] other countries knowing what the things are selling for in the U.S.," she said.

Elsewhere, old information propagated by search engines has been a problem. Yahoo, Inc., for example, doesn't refresh its databases of Web page addresses as often as Spiegel changes its site. Therefore, Yahoo users can frequently turn up dead Spiegel links, said James Summers, electronic publishing systems manager.

The cataloger has met with Yahoo officials and others to urge them to "spider," or search and collect, Web page addresses more often, but no formal agreements have been signed.

Next on Spiegel's list of ideas is interactive help. Confused users could call for a box to pop up that would let them do text-based chat with sales agents.

Early tests indicate that the system would be less expensive than telephone conversations because the chats tend to be shorter, Heiple said. □

Extranet aids in sales

CONTINUED FROM PAGE 47

through Internet audio connectivity using RealAudio from Progressive Networks, Inc. in Seattle.

The First of America agents sell a variety of consumer insurance products, including auto, home, term life and extended care, both to individuals and to corporations on behalf of their employees, Peterson said.

By using the Internet to empower sales agents, Allmerica has bypassed one of the chief obstacles that has kept insurance companies off-line, said David Weisman, an analyst at Forrester Research, Inc. in Cambridge, Mass.

Insurance companies have been reluctant to set up Internet connections to sell insurance directly for fear of competing with the insurance agents who sell their products.

"A lot of insurance companies are held captive by the agents. The only relationship that exists is between the customer and the agents rather than the customer and the insurance company," Weisman said.

Only 18% of insurance firms offer policy approvals online or plan to do so within a year, according to an April report from Forrester, which surveyed 50 top insurance companies. About 44% said they don't plan to offer online policy approvals within three years — or ever.

Security was a major concern for the extranet. "We're a bank, and people are trusting us with their personal information," Phillips said. "Any problem with Internet security is a reflection on the bank."

Agents access the system using a belt-and-suspenders double-protection scheme — conventional password protection, combined with digital certificate technology, a kind of software-based authentication system from VeriSign, Inc. in Mountain View, Calif., Phillips said. Data moving over the Internet is encrypted using Secure Sockets Layer encryption from Netscape Communications Corp.

The extranet is part of the larger project of letting agents at banks sell insurance for Allmerica. Return on investment will be measured for the overall project rather than for the extranet project alone.

The first benchmark will come this fall, when Allmerica will look at overall revenue brought in and measurements of how interested potential customers appear to be — how many times agents request price quotes, applications and needs analyses, Peterson said.

He wouldn't provide specifics on the cost of the project or expected revenue. □

August 1997

NORTH AMERICA

Currents

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Protect ME!

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Check out PowerNews™ at *http://www.apcc.com/english/powernews/currents*

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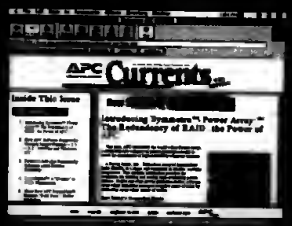

Special Offers

WIN!

Watch for APC on TV!

Power Companies Warn Users: "Beware of Summer Blackouts."

Most of the time electrical problems hit when you least expect them. But what if you were notified in advance? You may have enough time to shut down your essential electronics, or at least plan and implement a solution that will eliminate the threat of hardware damage and data loss due to power problems. This summer, utility companies nationwide are giving network administrators and computer users just that kind of warning. But is a warning enough? What happens to your business when the power is out?

The Coming Shortage

As the power industry gears up for expected summertime brownouts (resulting from increased power demand), lightning storms and various seasonal anomalies, a new threat to network computing has appeared on the horizon: planned power outages due to the expected power shortages.

According to *Electric Utility Week* (May 5), Upper Midwest utilities are "reactivating mothballed power plants, scrambling to implement transmission reinforcement projects, and attempting to secure generation and transmission capacity from neighboring utilities in an effort to head off possible power shortages this summer."

Although industry experts like the North American Electric Reliability Council have predicted such shortages for more than a year (see APC Currents, June p.8), the immensity of the problem combined with the volatility of recent deregulation in the utility industry has left few options besides this desperate scramble for surplus power and planned outages.

On April 10, Wisconsin utilities warned that with about one-third of the nuclear generating capacity in Wisconsin and the Upper Midwest temporarily out of service, the region could be facing electricity supply shortages over the next six months.

Illinois faces the same predicament. On April 28, Illinois Power reported that it would restart three mothballed Wood River natural-gas-fired units. Commonwealth Edison Co, Chicago, Ill, is seeking industrial and commercial customers with their own dormant generators that may help ease some of their load. The company is intensifying infrared fly-overs, looking for hot spots on its transmission system that need to be repaired or replaced.

It's The Same All Over

The outlook is the same in other parts of the country as well. According to the Summer Summary of the New England Power Pool (NEPOOL), a consortium of that region's electric utilities, "Hot and humid summer days in New England can create the highest peak electric demands of the year, and often, these demands can put a strain on electricity suppliers."

NEPOOL reports in its summary that due to four of the region's biggest power plants being off line; three nuclear plants at Millstone Point, Connecticut and the Maine Yankee nuclear power plant, "New England utilities are taking aggressive steps to either generate additional power or conserve existing resources."

New England utilities are also proposing the reactivation of a number of "mothballed" generating units, much like their Midwestern counterparts. In addition, NEPOOL suggests in its summary that customers "conserve energy and...use their own emergency generation, reduce usage or shut down operations as needed."

What does this mean for computer users? Well, if even if you have your own power generating facility to produce electricity for your company, you will still need instantaneous battery back-up power protection to ride through brownouts and to bridge the gap before generators kick in. Without that bridge, your systems will certainly crash, corrupting data and possibly damaging hardware. Most businesses, however, except hospitals and the utilities themselves, don't have any generating systems in place. Dependence on the utility for electricity is virtually universal.

If the power companies can't reactivate enough closed-and costly power plants, or scrape up sufficient surplus power from other regions, the summer could prove disastrous for any business that depends on computing to generate revenue, serve customers or manage operations.

According to the New England Power Pool summary, "Although all of these efforts are aimed at avoiding capacity shortages, ...NEPOOL might have to resort to voltage reductions, public appeals for customer load curtailment or power interruptions in order to meet demand. When feasible, warning of interruptions will be given."

Of course, warning will not always be provided, leaving network administrators and power customers with one more threat to their business, not to mention their peace of mind.

The only solution to the grim reality of US power capacity problems is to be sure your networks are protected by premium power protection. Such protection has become a necessity in an environment where lost power can often mean a lost business (see related story, page 12).

APC SurgeStation,™ Unveiled at Spring COMDEX, Promises Summertime Peace of Mind

In the past five years APC has sold over 4,000,000 surge suppressors. They have been praised for their reliability and effectiveness in the field, and have saved untold millions of dollars of computer and peripheral equipment from surge and lightning damage.

The SurgeStation, APC's latest offering, accepts the challenge issued by APC customers to incorporate several "dream features" while maintaining the key elements and high-performance that make SurgeArrest the most reliable and one of the best selling surge suppressors in the world.

Months of intensive design work were spent to bring you the newest generation of SurgeArrest: APC SurgeStation The development project, code named Genesis, was a revelation in surge suppressor design. The finished product, introduced in June at the Spring COMDEX trade show, offers several unique features and beoefits.

All the Features You Wanted

The SurgeStation products have eight outlets, including three outlets spaced to handle transformer blocks easily, and two "always on" outlets for convenience. The new building wiring-fault indicator, located at the base of the power cord, clarifies the meaning of the indicator and allows you to diagnose mis-wiring as soon as the unit is plugged in. As if those features weren't enough, we also added a right-angle plug to help maximize your work space, and a switch large enough to be pressed with your foot, but recessed enough to prevent an accidental turn-off. Finally, the SurgeStation includes cord-management straps and holders which let you wrap up and organize excess or unruly power cords.

To resolve the challenge of protecting more than one dataline, SurgeStation models are available with protection for multiple telephone lines, telephone and cable/DSS protection, or telephone and network protection (10BaseT, 100BaseT, and Token Ring), all within a single surge suppressor. The SurgeStation can be easily mounted on the wall, or fit on or under your desk or workspace.

Your "Dream" Features:

"I want to plug transformer blocks without covering up any other outlets."

"I need more outlets for peripherals."

"I want to plug a telephone line and a modem dataline into the same surge protector."

"A switch easier to turn on and harder to turn off."

"Give me a right angle plug so I can move my desk back against the wall."

"I need some outlets that are always on."

"Can you help organize all these cords?"

APC Listened!

For details about how to save your computer and peripherals from lightning and other power anomalies with APC SurgeArrest SurgeStation, call 888-289-2722, ext. 8182.

Lifetime Equipment Protection Insurance

SurgeStation joins APC's SurgeArrest Professional, Performance and Network product families, and comes with up to $25,000 of lifetime insuraoce against surge damage to properly connected equipment (US and Canada only. See policy for details.)

Joe Brickler
JTB Office Automation Consultants
Cincinnati, OH

"APC Makes a Major Difference in Keeping Your Equipment From Being on an Insurance List."

"JTB Office Automation Consultants resells, repairs, installs networks, and writes customer software, in addition to being an ISP. This story starts the Friday before the flood of the Ohio Valley- where we are located. Winds were very heavy on that day, and caused a power outage.

"Since it was 6:00 P.M. I decided to go home where I could work on another project only to find my computer down at home. First, thinking the computer was broken, I checked the PC, then the breaker box, then finally my APC SurgeArrest. I pulled the SurgeArrest out from the desk to find out it was blown. It was a clear unit and since it was clear, you could see exactly where it had blown. I was very relieved that my PC survived.

Later that night my stepdaughter asked me what the strange smell was in the house. After looking around I found the surge had hit the Brand C protector (C meaning Cheap). I found the television in the living room was fried and the cable box controller was melted with a black char leaving burns all over the steel converter box. A police officer later told me that two doors down, a cable box actually caught on fire. I'm lucky nothing was wrong with my PC - thanks to the APC SurgeArrest.

I have been in the business since 1986 and never paid that much attention to brand of surge suppressors. Now I know that APC makes a major difference in keeping your equipment from being on an insurance list. Now at JTB, every computer sold will have a APC SurgeArrest or no warranty, and that's final. I'll give it to them if I have to. There is no compromise."

CRN: "Increase Network Uptime, Reliability." with APC's PowerAudit™

Computer Reseller News

Building or reconfiguring an entire network can be one of the greatest challenges a network administrator faces. Often, meeting the challenge means bringing in the support of an expert who knows the ins and outs of both your current and future system. Now, APC PowerAudit gives you a new service tool to ensure your network transition goes smoothly if not according to plan, and *Computer Reseller News* has found that the service means "increased network uptime and reliability."

APC's PowerAudit helps prevent costly network or system failures by providing a comprehensive overview of your network's current electrical environment and by designing custom, detailed and bulletproofing strategies for critical equipment.

APC PowerAudit engineers make recommendations to bring your site up to IEEE, computer-grade power standards and down from the dangerous precipice of bad power.

PowerAudit provides a fail-safe way for corporations to build an excellent network foundation, no matter how unreliable the utility power is.

Why is a PowerAudit so important? According to Casey Ives, managing director for Intelligent Electronics, "Hardware and software partners have done a great job increasing network availability. Power is the last frontier in network availability."

CRN also recognized that a PowerAudit uncovers a variety of problems that may have nothing to do with the computer equipment: "It may be that the power infrastructure in the building was not designed to conform with National Electrical Code (NEC) or Institute of Electrical and Electronics Engineers (IEEE) specifications," says CRN. "Or it may be that a business is simply overloading power supplies, potentially setting the stage for a hazardous situation."

Unfortunately, wiring deficiencies in new and old buildings alike bring about the greatest number of network power problems, accounting for nearly 50 percent of all corrupted and lost data. In fact NEC wiring specifications are not sufficient to protect your network from damage or data loss.

In 75 out of 75 PowerAudits performed last year, problems were uncovered by engineers that were hazardous to computer equipment and data or that violated national or local code.

For more information about planning with PowerAudit, call 888-289-2722, ext 8182, or download a sample report from the PowerPage.™

For more information about PowerAudit, call fax the reply card at the back of the magazine to our resource center for free literature, or call 888-289-2722, ext. 8182. Visit APC's PowerPage™ on the Web at *http://www.apcc.com*, where you can examine a sample PowerAudit report.

Top Business Perfomer: Another Reason to Choose APC

APC recently ranked highly in two finance/business magazines, its stock performance mirroring its successful performance in sales.

APC: Five Years in NASDAQ 100

In the May 12 special section of Fortune focusing on the Nasdaq 100 Index, APC was ranked as the second best price/performance stock in the index in 1996. APC's stock had appreciated 186.8 percent, second only to Dell Computer which posted a 206.9 return in 1996. Fortune cited APC's record sales of $707 million and earnings of $92 million for that year.

To be included in the Nasdaq 100, according to the same special section, a company must be "among the larger, non-financial stocks on the Nasdaq Stock Market," and their stocks must, "have an average daily trading volume of more than 100,000 shares."

The article continues, "...while almost all are over $1 billion in market value, $6 billion is the average. In addition, companies have to be 'seasoned' by being listed on the Nasdaq Stock Market for two years before they can be measured for the index by other quantitative standards." APC has been a member of the Nasdaq 100 since 1993.

FORTUNE®

NASDAQ 100

APC Making The Grade

In the May 20 issue of Financial World, APC was given the ranking of A [very high] in its Independent Appraisals of Stocks section. The grades Financial World hands out range from A+ [superior], A [very high], A- [high], B+ [above average], B [average], B- [below average], C [speculative] to D [poor].

Financial World lists the 616 largest U.S. companies traded over the counter, based on market value. Each stock is rated on, "three-month percent change in stock price; percent change in trailing four quarters' sales; percent change in trailing four quarters' earnings per share; debt as a percent of equity; and return on capital."

For more information about APC financial performance, or to obtain an annual report, call 401-789-5735 x 2994 or E-mail *investor relations@apcc.com*. American Power Conversion Corp. stock is traded on the NASDAQ exchange under the symbol APCC.

OFTEN, NOTHING COSTS YOU MORE THAN A SERVER CRASH.

NOW SUPERIOR SERVER PROTECTION COSTS YOU NEXT TO NOTHING.

NOW AWARD-WINNING APC® PROTECTION COMES STANDARD WITH THESE SYSTEMS.

ENTRY LEVEL SERVER

DELL® POWEREDGE® 2100 SERVER
200MHz PENTIUM® PRO PROCESSOR

- 32MB ECC Memory (512MB Max.)
- 256KB Integrated L2 Cache
- Integrated Ultra/Wide SCSI-3 Controller
- 2GB Ultra/Wide SCSI-3 Hard Drive
- 8X SCSI CD-ROM Drive
- Intel® Pro 100B PCI Ethernet Adapter
- Intel LANDesk® Server Manager v2.52
- 6 Expansion Slots: 3 PCI, 3 EISA
- 6 Drive Bays
- ***Smart-UPS® 700 from APC***
- ***Free PowerChute® Plus Software***

- ***Optional SmartSlot™ Power Management Accessories***
- 3 Year Limited Warranty* with 1 Year of NBD On-site* Service
- 24x7 Dedicated Server Hardware Technical Telephone Support
- Free 30-Day Server Integration Telephone Support

$3099
Business Lease*: $115/Mo.
Order Code: 200168

MID RANGE SERVER

DELL POWEREDGE 4100 SERVER
200MHz PENTIUM PRO PROCESSOR
(Dual Processor Capable)

- 64MB ECC Memory (1GB Max.)
- 512KB Integrated L2 Cache
- 2 Integrated Ultra SCSI-3 Controllers
- 4GB Ultra/Wide SCSI-3 Hard Drive
- 8X SCSI CD-ROM Drive
- Intel Pro 100B PCI Ethernet Adapter
- Intel LANDesk Server Manager v2.52
- 8 Expansion Slots: 5 PCI, 3 EISA
- 10 Drive Bays
- ***Smart-UPS 1400 from APC***
- ***Free PowerChute Plus Software***

- ***Optional SmartSlot Power Management Accessories***
- 3 Year Limited Warranty* with 1 Year of NBD On-site* Service
- 1 Year DirectLine™ NOS Support
- 24x7 Dedicated Server Hardware Technical Telephone Support
- Free 30-Day Server Integration Telephone Support

$6849
Business Lease: $247/Mo.
Order Code: 200190

HIGH END SERVER

DELL POWEREDGE 6100 SERVER
2x200MHz PENTIUM PRO PROCESSORS
(Quad Processor Capable)

- 128MB ECC Memory (4GB Max.)
- 512KB Integrated L2 Cache per Processor
- 2 Integrated Ultra/Wide SCSI-3 Controllers
- 3x4GB Ultra/Wide SCSI-3 Hard Drives
- 8X SCSI CD-ROM Drive
- PowerEdge Expandable RAID Controller
- Intel Pro 100B PCI Ethernet Adapter
- 10 Expansion Slots: 6 PCI, 4 EISA
- 10 Drive Bays

- ***Smart-UPS 1400 from APC***
- ***Free PowerChute Plus Software***
- ***Optional SmartSlot Power Management Accessories***
- 3 Years of NBD On-site* Service/ On-site Setup and Validation
- 24x7 Dedicated Server Hardware Technical Telephone Support
- Free 30-Day Server Integration Telephone Support

$16,099
Business Lease: $500/Mo.
Order Code: 200220

Given everything that's riding on your company's servers, crash protection is something you can't afford to be without. Which is why every Dell PowerEdge Server comes with the industry-standard features you've come to expect. And since 45%## of all data loss is a result of bad power, we've just done something to bolster our award-winning reliability. We have worked with APC, the industry leader in power protection with over 8 million satisfied customers and a host of awards. Which means you'll find APC protection available across the entire line of PowerEdge servers, along with a $25,000 Lifetime Equipment Protection guarantee* to replace or repair your server should a power-related problem arise. So choose your Dell PowerEdge. For high-end reliability there's the Dell PowerEdge 6100, loaded with redundant cooling fans, ECC memory, hot-pluggable drives and the Smart-UPS 1400 with optional SmartSlot Power Management accessories. Or choose the Dell PowerEdge 4100, which also comes with APC Smart-UPS, a recent recipient of *PC Magazine*'s Editors' Choice Award.†† Or the Dell PowerEdge 2100, *Network Magazine*'s‡‡ Small Business Server of the Year. Whichever you choose, two features remain consistent: reliability and value. Things no business can afford to overlook.

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*For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P. (One Dell Way, Round Rock, TX 78682 Attn: Warranty). **See policy for details. ##1995 Contingency Planning Research. ††Nov. 15, 1995 issue for APC Smart-UPS. ‡‡Nov. 1995 issue. †Leasing provided by third-party leasing companies to permitted customers. *On-site service provided by an independent third-party provider. May not be available in certain remote areas. ©Prices and specifications valid in the U.S. only and subject to change without notice. APC, the APC logo, Smart-UPS, PowerChute and Protect ME, logo are registered trademarks and Protect ME and SmartSlot are trademarks of American Power Conversion, Inc. Intel and Pentium and LANDesk are registered trademarks of Intel Corporation. ©1997 Dell Computer Corporation. All rights reserved.

VARBusiness Says New Symmetra is Tops

EDITOR'S CHOICE

VarBusiness wasted no time recognizing APC's most recent innovation, the Symmetra™ Power Array™, as the kind of product that the computer industry needs. The magazine editor, Jenna Kern, points out that sensitive electronics represent a growing majority of the devices consuming power in North America. That trend means power protection is essential.

"The need for...Symmetra is stronger now than ever, given the movement of business-critical apps from the glass house to smaller data centers with lower-cost file and Web servers." continued *VarBusiness* editor Jenna Kern in citing the product as Editor's Choice. "Such apps often involve crucial functions such as Web-based OLTP, so continuous power is essential."

Kern was quick to key in on the features and benefits that make the Power Array such a critical element of datacenters everywhere: "Symmetra is made up of hot-swappable 4kVA power modules and battery modules that can be upgraded as needed. That way, [you] can purchase the backup capability they need now and easily scale up when the time comes, which it inevitably will.

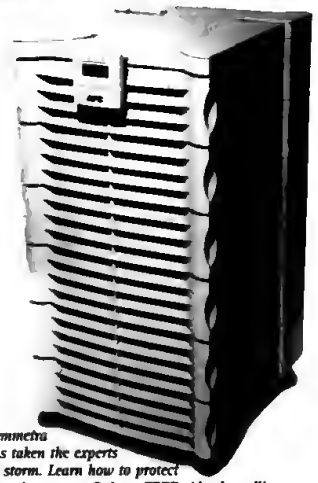
"This hot-swappable nature makes it easier for [you] to manage and service the Symmetra. The system's four SmartSlots let network administrators choose how they want to be informed in the event of an outage: via the network, SNMP, the Web or phone/beeper. If any modules need servicing, [you] can pull them out and work on them without shutting down the system."

"Symmetra" Power Array" energizes the high-end UPS arena."

-Jenna Kern, VARBusiness *Editor*

VARBusiness

With seasonal and year-round power problems on the rise, Symmetra's unique protection promises to help administrators everywhere rest a little easier. For more information about protecting your datacenter, call 888-289-2722, ext. 1001.



Symmetra has taken the experts by storm. Learn how to protect your datacenter: Order a FREE video by calling 888-289-2722, ext 8182.

How Much is Power Array™ Uptime Worth to You? This ROI Worksheet Reveals the Cost of Your Power Availability Gap

Complete the ROI worksheet to see what redundancy and scalability mean to your bottom line.

If you're a datacenter manager, the difference between a corner office and a cramped cubicle can be measured in your network's reliability. That's why you've invested thousands in clustered servers and RAID arrays. But when the most common cause of downtime is bad power – nearly twice as common as human error – exactly how safe is your network, not to mention your career path?

According to the published Mean Time Between Failure (MTBF) figures of competitors' units, a typical legacy UPS is rated at 95% system availability, leaving a 5% power availability gap. Use the worksheet to compute what that availability gap costs you, then determine how much you'll save when you replace your legacy system with a redundant, fault-tolerant Symmetra Power Array.

For more information about how this award-winning technology can protect your datacenter, call 888-289-2722, ext. 8182

ROI Worksheet

Average Cost per Downtime Event		[Sample Data]
Company size (Annual Revenue):	*1*	[$400 mil.]
% Revenue directly linked to systems/network:	*2*	[80%]
Actual system-related revenue risk:	*3*	[$320 mil.]
Revenue loss per hour downtime: [*3* / 2000 hrs.]:	*4*	[$160,000]
Personnel cost per hour: [# of users x hourly wage]:	*5*	[$30,000]
Rev. & Pers. cost per event [*4* + *5* x MTTR (24 hours)]:	*6*	[$4.56 mil.]
Lost data cost per event: [*4* x 8 hrs x 12%]:	*7*	[$153,600]
Total cost per event [*6* + *7*]:	*8*	[$4.71 mil.]

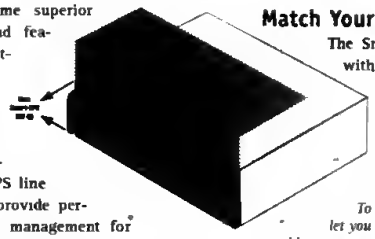
A. No UPS protection	B. Legacy UPS	C. Power Array
Risk of downtime =	Static downtime risk =	Flexible downtime risk =
15* x *8*	15 x *8* x .05**	15 x *8* x n (n = % gap†)
$ [$70.7 mil.]	$ [$3.54 mil.]	$ [$7,065]

*LAN Computing, 11/2/92 **Published Competitor Legacy UPS Availability = 95% †Varies based on Power Array configuration

NEW 3U Smart-UPS® Rack-mount: All the Power in a 40% Smaller Size

New 3-U Rack-Mount Chassis

APC announces a rack-mounted Smart-UPS uninterruptible power supply (UPS) in a new 3U rack-mount form factor. The SU2200RM3U and SU3000RM3U rack-mount Smart-UPS utilize a new 3U (5.25") chassis, reduced from the previous 5U (8.75") chassis. The units provide the same superior functionality and features of the existing Smart-UPS line in a compact, more convenient size.



To let you add more components to network enclosures, APC sliced 2U of size from the Smart-UPS 2200 and 3000, without reducing power or runtime.

The rack-mount Smart-UPS line is designed to provide performance power management for advanced business networks. Mounted in industry-standard, 19" racks and enclosures like APC NetShelter™, and offering full SNMP manageability, the units are an ideal protection solution for today's rack-mounted network and internetworking equipment.

"With more computer equipment moving into rack enclosures, we wanted customers to be able to utilize more server and interoetwnrking equipment. The new Smart-UPS 2200 and 3000 rack-mount models accnmplish this by reducing the UPS height to a new 3U low profile," said Scott Disen, APC's product manager, Network Power Solutions Division.

Cnmpatibility with today's server management products is a must fnr critical peripherals. All Smart-UPS products are completely cnmpatible with server management software such as Compaq Insight Manager, IBM Netfinity, and HP NetServer Assistant.

The Smart-UPS family features SmartSlot™, an internal accessory card slnt for integrated UPS management. SmartSlot enables the user to customize and enhance the management, control and performance of the Smart-UPS unit. The SmartSlot and nptinnal accessory cards offer customers convenient, seamless integratinn nf UPS accessories.

The PowerNet™ SNMP Adapter card allows the UPS to be connected directly to the network for SNMP management. The UPS Interface Expander card is used for multiple platform, unattended, graceful shutdown from a single UPS. The Call-UPS II card provides remnte, out-of-band management of the Smart-UPS over a modem.

Match Your Black IBM Server

The Smart-UPS Rack-mount 1400, with Black bezels as a special order option, will be added to APC's standard distributor channel. For reference, the black color matches the IBM ThinkPad nntebook computer family (IBM Raven Black).

These units will be available from the IBM PC Company in September of 1997, but are being released through the channel to accommodate IBM customers that have purchased the IBM 325 Rack Drawer Server and want a black UPS to match. These units will also meet growing customer demand for black rack mount UPS solutions for telecom applications as well as non-IBM black rack equipment.

The new black bezel APC Smart-UPS 1400 - shown here mounted in APC's NetShelter - will soon be available as a special order item.

PowerView™ UPS Management Display

Hand-held monitoring and control of UPSs and Power Arrays™

When you're trying to solve a network problem, you need comprehensive control of every component of that network, including your APC UPS units. Sometimes those units are difficult to reach or even inaccessible, in a locked room or rack, because by their very nature an APC UPS needs much less attention than other network components. Still, in the event a power problem strikes, you need to be able to control the UPS without a step-ladder or the key to your wiring closet.

PowerView UPS Management Display provides remote control and monitoring of a connected APC UPS. PowerView is equipped with a cable so you can access the UPS controls without having to access the actual UPS.

The PowerView function menu is divided into seven partitioned categories:

1. UPS Status
2. UPS Setup
3. UPS Control
4. Event Logging
5. Control/Status of Accessories
6. Configuration of the Display
7. UPS Diagnostics

Four LED indicators across the upper face of the display provide overall status of the APC UPS:

- LOAD ON Green Indicates that the UPS is supplying power to the load (electrical device).
- ON BATTERY Yellow Indicates that the attached load is powered by UPS batteries.
- BYPASS Yellow Indicates that power to the load is being supplied directly from the power utility. The UPS has been effectively removed from the circuit. (Matrix-UPS and Symmetra only)
- FAULT Red Indicates that the UPS has detected an internal fault condition.

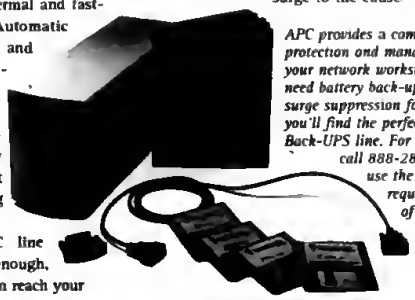
For more information about how PowerView can help you manage your network, call your local APC reseller, fax the reply card at the back nf the magazine to our resource center for free literature, or call 888-289-2722, ext. 8182. For instant information, visit APC's PowerPage™ on the Web at *http://www.apcc.com* .

Protect Network PC Hardware and Data with ONE Solution: APC Back-UPS Pro®

Protect Network PC Hardware

Hardware represents a huge investment, but most hardware vendors or suppliers don't warranty their products against damage caused by surges, spikes or direct lightning hits.

Back-UPS Pro reduces all electrical surges to safe levels, and stops lightning with a multi-phase system of thermal and fast-acting fuses. Automatic Voltage Regulation and instantaneous battery back-up correct voltage fluctuations. The computer sees only clean, consistent power, even during a blackout.



APC provides a complete range of power protection and management options for your network workstations. Whether you need battery back-up power and premium surge suppression for 10 PCs or 10,000, you'll find the perfect solution in the Back-UPS line. For more information, call 888-289-2722, ext 8182 or use the FREE literature request card at the back of the magazine.

And as if AC line threats weren't enough, spikes and surges can reach your hardware via datalines and damage your internal computer network interface cards, modems, motherboards, power supplies and hard drives. The surge will move from one component to the next as it dissipates, potentially destroying your whole computer. That's why Back-UPS Pro integrates dataline protection for 10Base-T network cabling (RJ-45) to prevent hardware damage from surges carried on these datalines. Full-time EMI/RFI noise filtration prevents data corruption caused by AC utility line noise.

PowerChute® Pro: WorkSafe™ Saves Data

Complete data protection and management requires PowerChute Pro software, which is included free with every Back-UPS Pro. Its WnrkSafe™ feature protects and saves work in progress in npen Microsoft Office applications.

WorkSafe ensures that your valuable data is safe whether nr not you are present when a power event occurs. In the event of a power nutage, PowerChute Pro activates the WorkSafe feature to save open files and gracefully close npen applications, like Microsoft Word and Excel. PowerChute Pro then sbuts down the operating system.

The Back-UPS Pro PNP, bundled with PowerChute Pro software, gives the user peace of mind by guaranteeing not only the integrity nf the operating system and applications, but also any wnrk in process that may be left open.

PowerChute Pro also features a Graphical User Interface (GUI) to provide information on UPS Status, recent UPS self-tests and UPS events. The Event Log shows a history of UPS operation to help track a problem to its source. For instance, timed HVAC equipment shutdown may cause a daily power surge as machinery dissipates energy. The log will help match the surge to the cause.

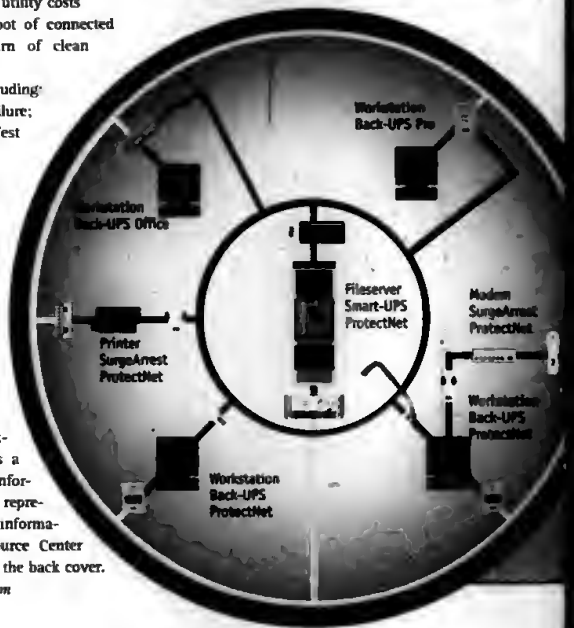
Other PowerChute Pro Benefits:

- Scheduled weekly or daily shutdown to help conserve power and cut utility costs
- Automatic System Reboot of connected workstation upon return of clean utility power
- UPS Configuration including: Simulated Power Failure; UPS Self-Test; and Test UPS alarm
- Configurable UPS shutdown and message parameters including: Timed Message Delay; Message Interval; Low Battery Shut-down; and Timed Shutdown allow you to decide to whom and when PowerChute *plus* should send information about problems.

For the latest NT workstations, Back-UPS Pro is a perfect match. For more information call your local APC representative, or fax/mail an information request to our Resource Center using the reply card inside the back cover. Or visit *http://www.apcc.com*

Node Protection a No-brainer

"Our current integral use of APC client UPSs was part of our strategic vision to stabilize network services throughout the enterprise regardless of any volatile environmental conditions," says Michael Mulhearne, CIO for America II Group, the 17th fastest growing company in America according to Inc.'s 1994 list. "It's a no-brainer to protect servers, but we learned that it was crazy to bog down our MIS staff with client-related downtime and data loss when an APC UPS is such a cost-effective solution. Now we properly protect every single workstation in our entire global network. We chose APC due to their excellent performance on our servers during Hurricane Erin. In fact, using APC's PowerNet SNMP Manager we can view power status across the network all the way down to the desktop. At the bottom line, having a standardized desktop environment that includes a fully integrated APC UPS is key to providing reliable information access to our employees, and that's what we're all here for."

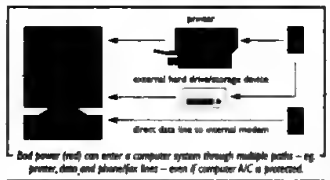


The Truth About Telephone Lines: Your Risk of Damage and Data Loss Doubles

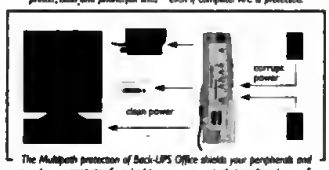
Power problems are more prevalent than you might think. In fact, you have a better chance of winning the lottery than of escaping power problems, the single largest cause of computer data loss and hardware damage. If that weren't bad enough, as soon as you plug a phone line into your computer, you double its vulnerability to power problems. Add any peripheral, and the threat triples. Even a shielded AC power line cannot protect against a power surge traveling down serial and datalines to toast your expensive PC.

In today's wired world, it is important that every workstation be Internet ready. With built-in phone line/10Base-T network cable surge protection, Back-UPS Office provides a seat belt for the drive on the information superhighway. It stops dangerous surges from entering your computer via phone lines and damaging your modem, network interface card, or even your motherboard.

Multipath Means Total Power Protection



Bad power (red) can enter a computer system through multiple paths – eg. printer, data and phone/fax lines – even if computer A/C is protected.



The Multipath protection of Back-UPS Office shields your peripherals and guards your computer from bad power on every path, providing clean, safe power (green), to your entire system.

Unique Multipath Protection

Multiple peripherals and datalines increase the chances of suffering from crippling power problems, yet these devices are necessary. So what's a computer user to do to minimize the risk?

Once again, Back-UPS Office can solve your problems. Back-UPS Office provides full-time surge suppression and a site-wiring fault protection system that spreads a multipath safety net under any remaining peripherals, like modems, printers, faxes and phone systems.

Whether on the floor, or mounted on a wall, Back-UPS Office provides the necessary surge protection for all your peripherals, as well as the critical battery backup for the CPU and monitor. The compact Back-UPS Office also streamlines your desktop power protection solution.

It's backed with a two-year warranty and APC's Lifetime Equipment Protection policy that provides up to $25,000 of insurance against surge damage to properly protected equipment. (See policy for details. Valid in the United States and Canada only.)

Don't let your workstation fall victim to the hazards of unprotected computing. Keep your system safe with reliable and proven multipath power protection – APC's Back-UPS Office.

For more information on protecting your workstation, call 888-289-2722, ext. 8182.

Bulletproof your system with APC's award-winning Back-UPS, Back-UPS Office and Back-UPS Pro. Use APC ProtectNet dataline surge suppressors for comprehensive server, laptop and peripheral protection. Call 888-289-2722, ext. 8182 for more information on how to integrate a complete APC solution, or to find your nearest APC dealer.

APC Power Protection Solutions Can Prevent Network Disaster

Protect ME!

APC

Utility power from an outlet, or dedicated AC line is not safe. In fact, a server isn't completely safe from the hazards of bad power until every network node is protected. The reliable many network managers make when planning is to cut costs on workstation power protection. These nodes pump life-blood into the server in the form of valuable data, and if that data is corrupt because of a local power anomaly, everyone on the network suffers. The cost of replacing such corrupt data, combined with the cost of workstation downtime and recovery can be devastating to a company's bottom line.

Without the premium surge suppression and instantaneous battery backup of an APC UPS, AC utility power subjects connected equipment to a constant barrage of power anomalies, the majority of which are transparent to the casual observer.

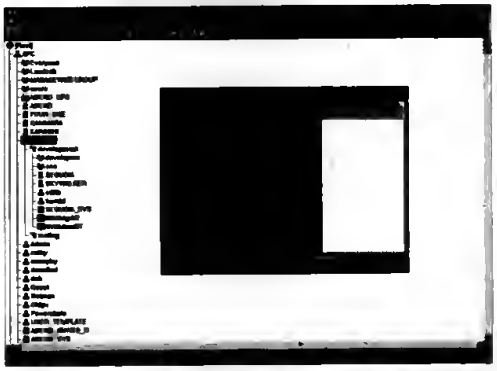
Speed and multi-tasking multiplies the risk to highly valuable data and work in process at any given second. Crashes can occur when your unprotected computer is abruptly starved of power, and corrupt files can be replicated to networked PCs or servers, compounding the cost of power problems.

A severe power event, which can strike at any time, prevents normal shutdown procedures. "Hard" shutdowns result in lost data, and can corrupt the master directory preventing automatic Windows system restoration, and increasing recovery time. That recovery time, when multiplied by the number of users on your network, increases costs exponentially.

How great are these costs? Medium sized companies rate them at $10,000 per hour, according to Electric Power Systems Quality, by Roger C. Dugan, senior consultant, Electrotek Concepts, Inc. Such costs can impact businesses so severely that they never recover from the problem.

For more information about how APC can help protect your network, call your local APC reseller, fax the reply card at the back of the magazine to our resource center for free literature, or call 888-289-2722, ext. 8182. For instant information, visit APC's PowerPage™ on the Web at http://www.apc.com.

APC PowerChute® *plus* for NetWare With New Support for NDS



New NDS-aware PowerChute plus improves management, increases security, enhances network performance and offers new ways to monitor your APC UPS units. Call 888-289-2722, ext. 8182 for more information.

PowerChute *plus* v.4.3 for Novell's IntranetWare, the latest version of APC's award winning UPS monitoring software package, will allow system administrators to monitor APC UPSs through the NWAdmin Utility of NDS. System Administrators will observe improved network performance and find it far easier to monitor all their APC UPS resources.

"The customers we share with Novell around the world requested an NDS-aware power protection package to enhance network security, improve network manageability and increase network performance," said Kevin Brown, APC Software Division marketing manager. "APC delivered the solution faster than anyone else."

Novell Directory Services (NDS), is the technology that provides a single, global, logical view of all network services and resources. This allows users to access network services and resources with a single login, regardless of the user's location or the location of the resources. It also offers a single point of control for administrators through graphical administration utilities. Critical to the success of such a scheme is the integration of network component resources into the NDS environment. APC's NDS-aware PowerChute *plus* software integrates power protection into the NDS environment.

" APC is the first UPS manufacturer to actively support NDS," said Michael L. Simpson, Director of Marketing for Novell's Internet Infrastructure Division. "APC's UPSs provide excellent power protection for IntranetWare servers. The release of American Power's UPS integration with NDS is another step forward in the plan to make directory services a single point of administration and single login infrastructure for the entire network."

Improved Security Validation

The latest version of APC's power management software uses the built-in NDS security system to maximize your peace of mind.

The benefits of this integration don't end with security: When power problems occur, a quick response time is critical. Having to log on to each server on the network separately just to check the UPS status eats away at precious seconds that should be used diagnosing and correcting the problem. With this new version of PowerChute *plus*, customers have a unified login id and will no longer be prompted to log on every time they want to access a new server. When accessing PowerChute *plus* through the Graphical User Interface (GUI), users are automatically validated through NDS rather than through a time-consuming additional login id.

Easy to Use

In even a medium-sized network, remembering which servers are connected to an APC UPS, not to mention which of those are running PowerChute *plus* software is a daunting task. To ease management of network resources, APC coded PowerChute *plus* 4.3 to place an APC UPS object in the NDS tree for each UPS connected to a particular server, and, if PowerChute *plus* is running on the server to which the UPS is connected, an attribute flag will indicate the software's presence. Administrators can easily view all of APC's UPSs in the WAN through the IntranetWare Administration tree.

Download PowerChute *plus* upgrades FREE from the web at: *www.apcc.com /english/prods/sware/upgrd*

"APC is the first UPS manufacturer to actively support NDS. APC's UPSs provide excellent power protection for IntranetWare servers."

–Michael L. Simpson
Director of Marketing
Novell Internet Infrastructure Division

Novell.

Enhance Network Performance

To further simplify the Administrator's management efforts, PowerChute *plus* will automatically update its information in the NDS tree. That means the software will no longer have to perform "bindery emulation", which caused repeated messages to be broadcast over the network. The result: A significant reduction in network traffic.

Asset Management: View APC UPSs via NWAdmin Utility

System Administrators will now have the ability to use the NWAdmin utility of NDS to view the status of all the UPSs on the Network.

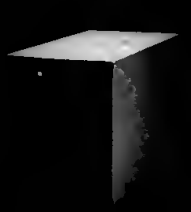
NWAdmin allows users to manage network resources. By providing a snap-in interface for NWAdmin, APC lets users browse the UPS objects with other network resources, and provides an additional option for viewing UPS information.

Every APC UPS will be represented by an APC UPS Icon. When the icon is expanded, the administrator will have access to information like the UPS model, UPS Status, Firmware revision, Serial Number and Replace battery status.

This OS upgrade is a critical step in the effort to provide network administrators with a comprehensive and reliable power protection solution. The software is expected to be released in September of 1997, and will be available for download, free of charge, from the APC PowerPage™ at *http://www.apcc.com*.

For more information about PowerChute *plus* for NetWare and NDS, call 888-289-2722, ext. 8182, or use the reply card at the back of the magazine to order FREE, detailed product literature.

Add the performance power protection of this baby

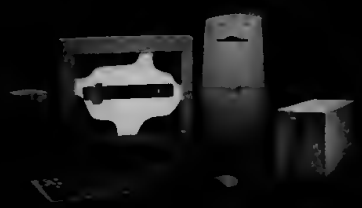


to this Bad Boy

And show mother nature just who's in charge

G6-233M

And You Get It From These GuYS



GATEWAY2000

555-888-0273

AMER CAN POWER CONVERS ON

Can A Power Outage Kill Your Business?

The real problem with bad power is that you never know when they will strike. This lack of warning leaves network administrators and power customers with one more threat to their business, not to mention their peace of mind.

Research has shown that only 43 percent of businesses suffering a disaster ever recover sufficiently to resume business, according to the National Archives and Records Administration in Washington, D.C. Among businesses that do reopen, only 29 percent are still operating two years later. Even more ominous is the fact that 93 percent of businesses that lost their datacenter for 10 days or more had filed for bankruptcy within one year of the disaster. And 50 percent of businesses that found themselves without data management for the same time period filed for bankruptcy immediately.

Now more than ever disaster prevention and recovery plans are critical, and with the growing dependence of businesses on their computers and networks, power protection and management must be part of that plan.

For more information about how APC can help protect your network, call 888-289-2722, ext. 8182. For instant information, visit APC's PowerPage™ on the Web at *http://www.apcc.com* .

Get Protected NOW!

Summer storms shower the worst luck on computer users.

Misfortune often comes in the form of lightning or a storm-related power surge or outage. But what can you do in the face of such awesome natural forces? Especially with only 24 hours in every day?

APC knows you haven't got time to waste, so the PowerPage™ offers several live interactive tools to ensure you get the power protection you need, when you need it. A quick three-step process will get you well on the way to summertime peace of mind.

1. Check out the APC Weather pages, especially the weekly national lightning strike pattern page and the Tropical Storm Tracker.

2. If you're still not sure how susceptible you and your network are to bad power, take the APC "Are You At Risk?" quiz to determine exactly where you stand in relation to Mother Nature.

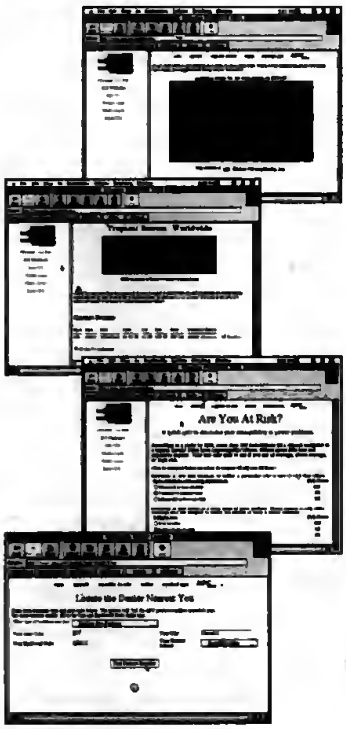
3. Once you've measured your susceptibility, a few mouse clicks will take you to the APC Dealer Locator so you can find the APC reseller nearest you.

You can point your browser right to any of these tools using the following direct URLs:

Lightning Strike Map
www.apcc.com/english/itool/itool006.htm

Are You at Risk?
www.apcc.com/english/itool/itool003.htm

APC Dealer Locator
www.apcc.com/english/itool/itool19.htm



Why Wait for *APC Currents*?

In the fast-paced world of high technology, just keeping up is a difficult task. That's why we deliver APC Currents to your mailbox once per quarter. But often that quarterly update isn't quite timely enough. Keeping a network or even a home PC up-to-date is a constant struggle, so you need news about the latest technology and solutions as soon as it's available.

NEW Web Edition

The NEW *APC Currents* Web Edition brings PowerNews™ right to your browser. Simply bookmark the direct URL (*http://www.apcc.com/english/powernews/currents*) and you'll have instant access to the latest news from APC.

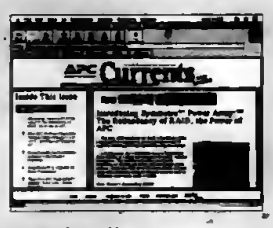
The Web Edition will be refreshed every two months. If you subscribe to the our E-mail news service we will notify you when it's updated.

FREE E-mail Subscription

As a compliment to APC Currents and the information posted on the Web Edition, we're offering free subscriptions to three valuable E-mail news sources. With them you can be assured of immediate notification of product introductions and updates, technical support documents, spec sheets, money saving promotions, APC customer stories and *APC Currents*.

POWERNEWS™

- Complete Press Releases: Product, Financial, ProtectME!
- Complete Electronic Promotions
- *APC Currents* electronic magazine
- Customer Stories
- Library of support documents



How to Subscribe:

Send an E-mail to *listproc@apcc.com* with no subject and "subscribe <listname> <your E-mail address>" as the body. For example: "subscribe powernews jdoe@place.com"

To unsubscribe at any time, send an E-mail to *listproc@apcc.com* with no subject and "unsubscribe <listname>" as the body.

Subscribe on the web at *www.apcc.com/english/itool/itool26.htm*

HP Pegs American Power Conversion for PowerWise Support

Hewlett-Packard Company and APC recently signed a contract that sets APC to provide ongoing warranty support for HP's installed base of HP PowerWise uninterruptible power supply (UPS) customers. Effective May 1, APC began providing UPS products and offering power-protection solutions for HP PowerWise customers' future UPS installations. HP will no longer produce, supply or support HP PowerWise products.

"HP PowerWise customers will be well-supported, thanks to APC's commitment to offer complete support to our global customer base," said Gary Whitman, marketing manager of HP's New Jersey Division. "APC has the technical expertise necessary to support HP PowerWise products and customers, and we are confident they will provide the quality of service our customers are accustomed to."

"HP recognizes the value-add that power protection brings to a customer's network," said Ed Bednarcik, general manager of APC's Network Power Solutions Division. "APC is committed to continue providing the highest-quality UPS products and services to HP PowerWise customers. We are well-positioned to accomplish this due to APC's comprehensive understanding of customers' power-protection needs."

HP PowerWise UPS customers worldwide may contact APC for warranty service and technical support for their installed systems. In North America, call (888) 204-0173. Outside North America, call 353-91-702000, extension 2012 (English), extension 2013 (French and Spanish) and extension 2014 (German and Dutch).

HP to APC SKU Conversion Chart

HP SKU	Model	APC SKU
C4779B	Power Wise L600	SU700NET
C4779B	Power Wise L600	SU1000NET
C4779B	Power Wise 1000	SU1000NET
C8228B	Power Wise L1250	SU1400NET
C4780B	Power Wise 2100	SU2200NET
C4821A	Add-on battery for 1000	SU24XLBP
C4822A	Add-on battery for 2100	SU48XLBP
C4690A	10Base-T SNMP Interface	AP9605
C4698A	10Base-T & Thin-LAN SNMP Interface	n/a
C8228A	Rack Shelf for L600	SU700RMNET
C8233A	Rack Shelf for L600/L1250	SU1000RMNET / SU1400RMNET
C4691A	Rack Shelf for 1000/2100	SU1400RMNET / SU2200RMNET
C4624B	IBM OS/5 Monitoring Software	AP9602
C4698B	SCO Unix Monitoring Software	AP9604
C4627B	HP-UX Software	AP9606 / AP9605
C4628B	Windows NT Cable Kit	940-0020
C4629B	IBM AS/400 Cable Kit	940-0006
C4630B	Banyan VINES Cable Kit	940-0004

"HP PowerWise customers will be well-supported, thanks to APC's commitment..."
Gary Whitman, marketing manager HP's New Jersey Division
HEWLETT PACKARD

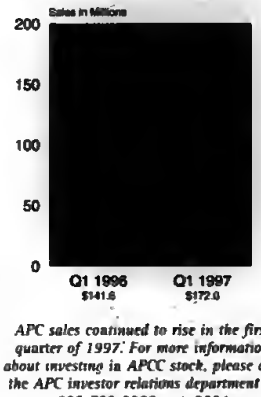
APC Sales Continue To Rise in Q1 '97

APC recently announced sales results for the three months ended March 30, 1997. Sales for the first quarter of 1997 were $172.0 million, up 21.5 percent from $141.6 million for the first quarter of 1996.

"We are very pleased with the (growth) we continue to see in our business," explained Rodger B. Dowdell Jr., president and CEO. "The global business fundamentals that drive the uninterruptible power supply (UPS) industry remain favorable for APC's long-term success.

"The past three months have been a very exciting period for APC," Dowdell said. "Most notably during the quarter, we announced APC's first entry into the above 5kVA power protection market with the Symmetra™ Power Array™. We designed an innovative system to bring scalability and redundancy to the UPS industry," added Dowdell. "We focused on fulfilling the primary needs for power protection in the datacenter customer set. By combining high availability power protection with remote manageability, predictive failure and proactive alerts, Symmetra is a complete solution for today's datacenter."

APC Comparative Sales Q1 1996 to Q1 1997



APC sales continued to rise in the first quarter of 1997. For more information about investing in APCC stock, please call the APC investor relations department at 800-788-2208, ext. 2994

"In addition, APC continues to focus on building relationships with many leading technology vendors," continued Dowdell. During the quarter the Company began ProtectME!™ with APC marketing campaigns with Dell Computer Corporation and Quantex Microsystems, Inc., as well as a new sales and marketing relationship with Acer Sertek in Taiwan.

Finally, APC continued to be the recipient of worldwide recognition during the quarter. This included the *ComputerWorld* "Reseller Choice" award, the *Computer Shopper* "Best UPS" award for the Back-UPS Pro®, *PC Bulgaria*'s "Editor's Choice," inclusion in *Dataquest*'s, list of product "Sizzlers+97" in India and, finally, for the sixth year in a row, APC was named "Best to Sell" by *The VAR* magazine in the UK.

For more information about APC financial performance, or to obtain an annual report, call 401-789-5735, ext. 2994 or E-mail *investorrelations@apcc.com*. American Power Conversion Corp. stock is traded on the NASDAQ exchange under the symbol APCC.

Irv Betch, Field Technician
Constellation Energy Corporation
Baltimore, MD

"APC Products Solve Customers' Power Problems Once and for All."

"I'm an energy services technician for BGE, the gas and electric utility that serves Baltimore and most of Maryland. After our merger this spring with Washington DC-based PEPCO, our new company, Constellation Energy Corporation, will be the 9th largest utility in the country, with more than 1.8 million electric and 546,000 gas customers. I'm one of three BGE technicians for our entire service territory, responsible for resolving customers' power quality problems or other related concerns.

"The most important words when discussing power quality are 'sensitive electronic equipment' and at BGE, the most important words are 'customer education.' Our standard operating procedure begins with educating customers on the importance of protecting sensitive electronic equipment and ends with providing the solution most appropriate to their needs.

In most cases, we've found APC products are the optimum solution to protect file servers, workstations and telephone systems. They solve customers' power quality problems once and for all, which makes their jobs – and ours – easier.

"The cost of an APC product is small compared to the cost of replacing or repairing sensitive equipment. "Once customers realize the importance of proper protection for sensitive equipment, our relationship becomes more interactive: a partnership focused not only on solving today's problem but also on prevention of others that may arise down the mad. We may install monitoring equipment on site to pinpoint events to assist us in identifying – and solving – the problem.

"In the three years that I've been part of the Energy Sales and Services department, I've never had a customer displeased with the APC products we've recommended. The bonus? These satisfied customers request more APC products for their homes and businesses."

Utility companies interested in co-operative marketing opportunities, please E-mail utility@apcc.com

"With APC Smart-UPS,® We Know Our Data and Hardware are Well Protected."

"Light Matters, Inc. is a special effects/computer graphics company, currently located in several adjoining apartments, We are a very rapidly growing home-based business. We're currently utilizing three servers and 25 Silicon Graphics workstations - to create visual affects for the film industry. Most recently we've worked on this summer's blockbuster, Volcano, The Nutty Professor, and are currently working on Titanic and the X-Files movie. You could say we take a sort of guerrilla approach to visual affects, because our overhead is low for the industry, but the work that is produced here is very high-end work. We have 6 animators working at this location.

"We created 65 shots for Volcano, and 36 of these included adding lava to the scenes. We did over a third of the lava in the movie - and of these, 21 were 100% computer-generated. Just as a point of interest, the other kind of lava actually uses a food additive called methycil which is also used in fast-food milk shakes! In the filro Volcano they used roughly 750 gallons of methycil - died fluorescent orange and red.

"Despite our appearances, we are essentially an apartment-based business and because we have so many machines running, we're just about at capacity in terms of available AC power to the apartment. On three occasions, we lost power during the production of Volcano, and the UPSs allowed us time to soft-shutdown the machines. The UPSs protected us from hard drive head crashes, saving us hours of recreating lost images. APC was the most reliable UPS available, and offered us the most cost-effective way to ensure data integrity.

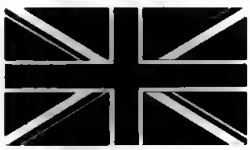
Colin Strause
3D Supervisor
Light Matters, Inc.

"We're using 10 APC Smart-UPS 1400's - each protecting three workstations. It instilled confidence while working knowing that our data and hardware was well protected."

"With the APC Back-UPS® in Place the Clock Will Continue to Work Throughout a Power Failure; Even the Chimes Continue to Strike Every Fifteen Minutes."

"In 1996, the town of Hathersage suffered over 30 power interruptions. Every time it happened I had to climb 100 steps to restart the church clock."

Peter Smith, Parish Clock Winder, Hathersage Parish, England



"St Michael's Church in Hathersage, Derbyshire, is a quaint 14th Century parish church. Its location, high in the Derbyshire Peak District, makes St Michael's the natural focal point of the village. The Tower clock can be seen at the top of the church spire and heard to chime the Cambridge Chimes every 15 minutes, every day of the year.

"The clock, donated to the church in 1879, is still in operation today. In those early days the official parish clock winder had to climb the 100 steps to the top of the tower every two days to wind the clock and the chimes. In 1969, it was hoped that the conversion to an electrical mechanism would make a tremendous difference, putting an end to the climbing and winding endured by the official clock winder. It didn't.

"The geographical locality of Hathersage means it is particularly susceptible to power failures. The overland cables and inclement weather often combine to knock-out the electricity supply. In 1996 alone, the area suffered 30 power failures in 12 months!! The design of the clock meant that every time the power failed the clock stopped and wouldn't restart on it's own. This meant another journey up the steps for the clock winder.

"The clock mechanism is designed to work at the same cycle rate as utility power. This makes it a very accurate time piece but also means when the power fails the clock won't restart.

"My family has been the official clock winders for three generations. My grandfather, father and myself have all climbed the narrow steps of the clock tower to wind it up. In 1969 the mechanism was converted to electric and I hoped it would be an end to the regular trips up the tower.

"My son, a software engineer, recommended the use of an APC Back-UPS to protect the clock mechanism when the power fails. The clock draws a comparatively small amount of power so the UPS keeps the clock running through the majority of our power cuts.

"With the APC Back-UPS in place the clock will continue to work throughout a power failure; even the chimes continue to strike every 15 minutes. In the past I would find myself resetting the clock almost once a week, now I only have to go up twice a year when the time changes in summer and winter."

For more information about Back-UPS call your local APC reseller, fax the reply card at the back of the magazine to our resource center for free literature, or call your local office (see numbers at bottom of page). For instant information, visit APC's PowerPage™ on the Web at *http://www.apcc.com*

Peter Smith, Parish Clock Winder
St Michaelis Church
Hathersage Parish
Derbyshire, England

FREE Mug! Take the PowerPage™ Trivia Challenge:

Your Back-UPS Pro® Knowledge Could Win You a Free Sparky Coffee Mug!

Besides reliability, name TWO of the key features of the award-winning APC Back-UPS Pro® or PowerChute Pro® software.

Entry Instructions: Visit *www.apcc.com /english/itool/itool008.htm* any time after July 31st, complete the form, and if you're one of the first 50 people to type a correct answer in the "Comments and/or Promotional Password" field, you'll win the free mug (limit one per person/address).

That's it. Good Luck!

APC Trade Show Calendar

DATE	REGION	SHOW LOCATION	BOOTH
		Regional Tradeshows:	
July 9	South	Netware User International-Philadelphia, PA	TBA
Aug 19-20	South	Computer and Technology Showcase-Jackson, MS	TBA
Sept 3-4	Midwest	NetCom-Minneapolis, MN	#214
Sept 17-18	South	NetCom-Charlotte, NC	#901
Sept 30	North	Netware User International-Boston, MA	TBA
Oct 1-2	South	ITEC-Kansas City, MO	TBA
Oct 7-8	West	ITEC-Portland, OR	TBA
Oct 8-9	South	Computer and Technology Showcase-Oklahoma City, OK	TBA
Oct 15-16	West	ITEC-Phoenix, AZ	TBA
Oct 15-16	South	ITEC-Raleigh, NC	TBA
Oct 29-30	South	NetCom-Nashville, TN	#301

Need tickets? Visit [illegible] about008.htm

"I consider the APC Back-UPS® Office™ to be an indispensible tool to get through school successfully."

"I attend Cornell University as a second semester freshman, majoring in animal science. I have an IBM Aptiva, and this computer is extremely important to me, both for access to the Internet (I contact my family via e-mail), as well as to communicate with professors.

"I have an average of three to four papers due per week, and I use the Internet to get help and information from other students and professors at other universities. My computer is critical to my work; losing access to it because of bad power is unacceptable.

"Our dorms were built at the turn of the century, and the wiring is not equipped to handle all the electronic devices that students use today - stereos, refrigerators and computers. In my first semester, we had three power outages, and I'm sure we're due for more.

"The first time a power outage occurred, I was typing a lengthy biology term paper, and it completely disappeared. Shortly after I got my APC Back-UPS Office, the power flickered and went out, but this time I was able to save my work and shut down. If you spend three or four thousand dollars on a computer, you should definitely spend a couple of hundred more to protect both the data and the hardware. I consider the APC Back-UPS Office to be an indispensible tool to get through school successfully."

Education

Severence MacLaughin
Student, Cornell University
Ithaca, NY

rtSlot™ Interface
Expander from APC!
With the Purchase of a
Smart-UPS® 1400 or Smart-UPS® 1400RM
between June 1 and August 30.
Just send this completed certificate along with a UPC symbol from an APC SU1400 or SU1400RM box and the original purchase receipt dated between 6/1/97 and 8/30/97, and get a FREE SmartSlot™ Interface Expander from APC!
$149 Value!
APC
888-289-2722
ext. 8182
$30 EBATE
of a Back-UPS® Office™
between April 1 and August 30.
Just send this completed certificate along with a UPC symbol from an APC Back-UPS® Office™ box and the original store receipt with the Back-UPS Office circled, and get a $30 rebate!
APC
888-289-2722
ext. 8182
APC Back-UPS
APC Back-UPS Office
$30 EBATE
of a Back-UPS® Office™
between April 1 and August 30.
Just send this completed certificate along with a UPC symbol from an APC Back-UPS® Office™ box and the original store receipt with the Back-UPS Office circled, and get a $30 rebate!
APC
888-289-2722
ext. 8182
APC Back-UPS
APC Back-UPS Office

Special Offer! $30 Back-UPS Office Rebate

Download More Coupons at www.apcc.com/english/promo/promo025.htm

FREE SmartSlot™ Interface Expander from APC!

Protect ME! APC

❑ **Yes!** I'm interested in receiving a FREE SmartSlot Interface Expander. I am enclosing the UPC symbol and original Smart-UPS receipt.

❑ **No,** I am not interested at this time, but please add me to your quarterly mailing list.

Name _____

Company/Title _____

Address: _____

_____

City: _____ State _____ Zip: _____

Phone: _____

# of servers on site? _____

Brand of UPS used? _____

We regret we cannot fulfill incomplete requests.

Please fill out completely and mail to:
Dept. A8-CR
American Power Conversion
132 Fairgrounds Road
P.O. Box 278
West Kingston, RI 02892

1. Offer good in US & Canada only.
2. Receipts must be dated between 04/97 and 08/97.
3. Requests must be received by 09/15/97.
4. Customers must send in: Original UPC labels from APC Back-UPS Office packaging - Original store receipt - Completed coupon.
5. Only original receipts accepted. Customer can request that their receipt be returned by including a note and a self-addressed stamped envelope with their rebate request.
6. Void where prohibited or restricted by law.
7. Limit five (5) rebates per customer.
8. Proof of mailing does not constitute proof of delivery. APC is not responsible for lost, late, illegible or incomplete orders or postage-due, damaged or separated mail.
9. Not eligible: APC employees, agencies, distributors or resellers.

10. Fraudulent submission of multiple requests could result in federal prosecution under the U.S. Mail Fraud Statutes (18 USC, Section 1341 and 1342).
11. Not valid with any other offer.
12. Allow 6-8 weeks for delivery.
13. Offer expires August 30, 1997.
14. Offer only good on Back-UPS Office (UPC code 7 31304 00588 9).
15. APC Reserves the right to rescind promotion at any time.

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Just send this completed certificate along with a UPC symbol from an APC Back-UPS Office box and the original dated store receipt with the Back-UPS Office circled for your $30 mail in rebate!

Mail Coupon to: Back-UPS® Office™ Rebate
P.O. Box 52930
Dept. #A8-CR
Phoenix, AZ 85072-2930

Name: _____

Company/Title: _____

Address: _____

_____

City: _____ State: _____ Zip: _____ Ctry: _____

Phone: _____ E-mail: _____

Additional Terms and Conditions:

1. Offer good in US & Canada only. Rebate in US Dollars only.
2. Store receipts must be dated between April 1, 1997 and August 30, 1997.
3. Requests must be received by September 15, 1997.
4. Customers must send in: - Original UPC labels printed on APC Back-UPS Office packaging. - Original store receipt. - Completed coupon.
5. Only original receipts accepted. Customer can request that their receipt be returned by including a note and a self-addressed stamped envelope with their rebate request.
6. Void where prohibited or restricted by law.
7. Limit five (5) rebates per customer.
8. Proof of mailing does not constitute proof of delivery. APC is not responsible for lost, late, illegible or incomplete orders or postage-due, damaged or separated mail.
9. Not eligible: APC employees, agencies, distributors or resellers.
10. Fraudulent submission of multiple requests could result in federal prosecution under the U.S. Mail Fraud Statutes (18 USC, Section 1341 and 1342).
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Just send this completed certificate along with a UPC symbol from an APC Back-UPS Office box and the original dated store receipt with the Back-UPS Office circled for your $30 mail in rebate!

Mail Coupon to: Back-UPS® Office™ Rebate
P.O. Box 52930
Dept. #A8-CR
Phoenix, AZ 85072-2930

Name: _____

Company/Title: _____

Address: _____

_____

City: _____ State: _____ Zip: _____ Ctry: _____

Phone: _____ E-mail: _____

Additional Terms and Conditions:

1. Offer good in US & Canada only. Rebate in US Dollars only.
2. Store receipts must be dated between April 1, 1997 and August 30, 1997.
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6. Void where prohibited or restricted by law.
7. Limit five (5) rebates per customer.
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The APC Re
Oldest Acti

More than ten years after their first UPS was built, APC has issued this challenge: Show us the oldest unit in active service, and we'll show you a great time in Block Island.

We're going to reward the customer who has believed in our reliability as much as we do here at APC, where we still have plenty of these old APC workhorses protecting our workstations.

At APC we believe Reliability is Everything, and we know that while we may have developed technology that made our original units obsolete, they still provide the same level of power protection they did on the day they rolled off the line. They may have a new set of batteries, but these units were built to last.

APC protection is designed to be invisible, so take a close look at the photo (or your old sales receipts) and see if you've got a potential winner protecting a server or workstation.

If that unit happens to be the oldest in active service, you'll win an all expenses paid* weekend for two on Block Island, RI, one of the Northeast's finest vacation spots!

1986, and Still running: 1, 2, 3.
1987, and Still running: 5, 6, 7.
1988, and Still running: 12.
1989, and Still running: 4.
1990, and Still running: 9, 10.
1992, and Still running: 13.
1993, and Still running: 11.
1994, and Still running: 8.

The trip includes:

- Two round-trip plane tickets to Providence, RI from anywhere in the continental US*
- A rental car to take you where you need to go.
- A tour of APC's main manufacturing facility.
- After the tour, we'll take you to the Smart-UPS assembly line, where we'll help you build your very own Smart-UPS to replace your winning UPS.
- We'll retire your old UPS to a permanent space in the lobby of our headquarters.
- A ferry ride from historic Narragansett Bay to beautiful Block Island
- Three nights accommodation at The Atlantic Inn, hosted by Brad and Anne Marthens, Keepers of the Inn.
- Complimentary mountain bike rental, so you can easily tour the island.

**See contest rules on other side of form*

Build your own Smart-UPS

To Enter Your APC UPS, Just Complete and Mail the Form on the Back of This Page

Free Weekend on Block Island!

The historic Atlantic Inn is hosted by Innkeepers Brad and Anne Marthens.

Located on beautiful Block Island, just off the coast of Rhode Island, the Inn boasts spectacular views.

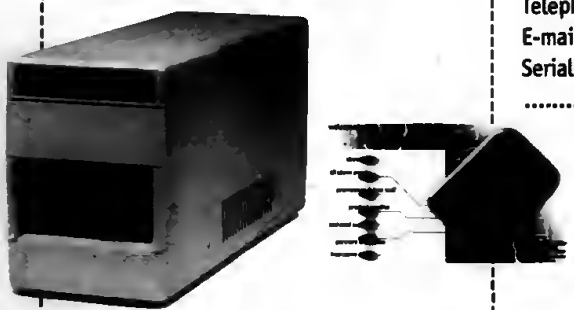
All you have to do is complete the form below, snap a picture of your APC unit, put them both in an envelope and send it to:

"APC Reliability Challenge"
c/o *APC Currents*
132 Fairgrounds Road
West Kingston, RI 02852

We'll check your serial number against our manufacturing records, and if you own the oldest APC UPS in active service, you'll win the weekend on Block Island!

Your Name .....
Address.....
.....
City.....
State.....Zip .....
Country .....
Telephone .....
E-mail .....
Serial Number (from the back of the unit) .....
.....

Attach your UPS Photo Here



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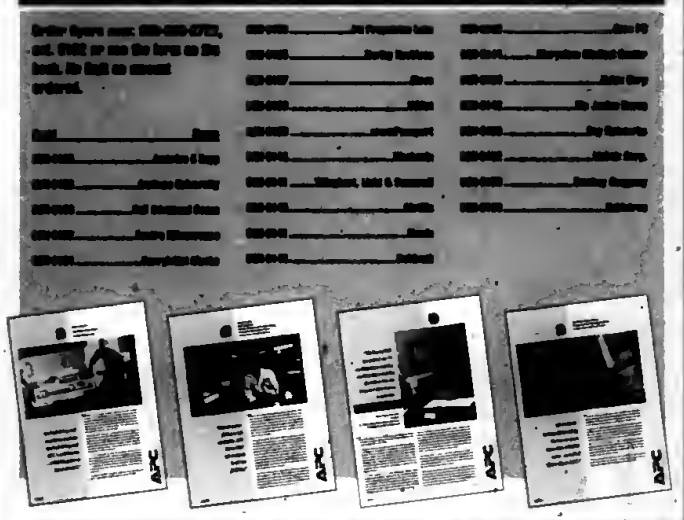

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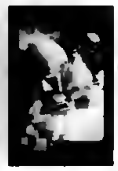
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APC in Action

"We have 800 offices in 125 countries. APC supplies the UPS systems that protect our computer rooms against power failures."

Technology

Erik Ubels
IT Manager
Deloitte & Touche

"Deloitte & Touche Tohmatsu International, is one of the world's 'Big Six' accounting, tax and management consulting firms. We have 800 offices in 125 countries and employ approximately 60,000 people. That includes 60 offices and about 3,000 employees in the Netherlands alone. The Amsterdam office is responsible for planning the IT strategy for the entire European office network as well as the implementation of IT systems at the Dutch offices.

"In the past three years, internal automation at Deloitte & Touche has been entirely dominated by standardization, with far-reaching consequences.

"All computer rooms at Deloitte & Touche have a two-metre high computer cabinet. All these cabinets, however, contain at least one component supplied by a single manufacturer: APC provides the UPS (uninterruptible power supply) systems that protect our computer rooms against power failures.

"APC has an excellent reputation. We've been using their products since 1986 and it has always been our policy to stick with a product if we're satisfied with it. APC's UPS devices continue to provide optimum protection for the nerve center of our computer system. We have integrated them with our Compaq equipment. Loss of data as a result of a power failure would be disastrous for a company like ours. That is why we only install equipment we can rely on 100%.

"APC's UPS systems have an added advantage. They are intelligent. Even the first version of these UPS systems took the fileserver off-line if there was a power failure. Also, they are SNMP-manageable, which makes systems management a whole lot easier. Because APC supplies a complete product range comprising both hardware and software, it can protect the entire network environment."

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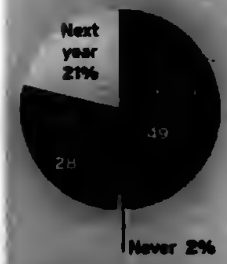
Briefs

When will companies invest in knowledge management applications?*



*Programs that holds the intellectual property of a company in a shared application

Source: IDC IS professionals

Reining in NT servers

▸ *Management issue raises debate over tools*

By Patrick Dryden

SOONER OR LATER, information systems managers will want to gain better control of Windows NT servers throughout their networks. The timing depends on the amount of pain they are willing to endure before implementing the appropriate management tools.

Here's the situation. With Windows NT servers proliferating, IS managers are beginning to crave a way to maintain them all without expending too much time and expertise.

The problem is that operators must call each server to check its performance, make sure vital business applications are still running or reset passwords, for example. Such routine tasks can devour staff time where hundreds of far-flung servers are in use.

Fortunately, tools have become available this year that enable one operator to manage multiple Windows NT servers simultaneously.

But potential users must balance their tactical needs — the need to fix the problem right away — with their strategic direction to manage everything through one integrated tool kit.

Patricia Barnes

"We're looking at two years to get our enterprise management platform working, but I have short-term needs to manage the NT world right now," said Kurt Guerrero, a senior network analyst at Northern Trust Corp. in Chicago.

The multibank holding company has selected TME 10 from Tivoli Systems, Inc. to manage networks, systems and applications for 7,000 local users and 4,000 more worldwide.

Consultants and industry analysts say IS groups can hope to reduce complexity, staffing and total costs by migrating to enterprise managers such as TME 10, Unicenter TNG (The Next Gen-

"TME 10 is right around the corner, so adding new point products now is a tough sell."

– James Brown, NationsBank

NT server, page 50

Virtual private network saves firm big money

By Bob Wallace

DESPERATELY SEEKING a way to let customers access its ordering process, Omron Electronics, Inc. set out last year to find a network that was affordable and efficient.

In the end, Omron not only saved money, but sidestepped the obvious answer and took a chance on an emerging networking scheme. The company expects to save $110,000 annually in communications costs by choosing a virtual private network (VPN) rather than building and managing its own wide-area network.

The Shaumberg, Ill., electronics firm chose an Internet service provider to support its first network. Omron said the network has doubled business in the short time since sites starting coming online.

Omron is a worldwide manufacturer of factory automation and electronic components for commercial and consumer products. The firm does business with manufacturers of all sizes and companies that use bar code readers.

VPN BENEFITS

Although users must design, build and manage WANs, they need only sign up with a service provider to use a slice of its backbone bandwidth as a VPN. Internet providers partition their networks to provide VPNs to many corporate users.

In this case, Savvis Communications Corp. in St. Louis sold Omron a lane on its national 45M bit/sec. Asynchronous

Virtual private network, page 50

WINDOWS NT 5.0

Users: Hype is nice, show us reality

By Laura DiDio

THE WAY Mike Sidell sees it, Microsoft Corp. could do users a big service by packing more tangibles into fewer customer briefings.

Sidell, senior manager of business systems in the electronic brokerage division at San Francisco-based Charles Schwab & Co., said his company is investing in Windows NT. "So I'd rather see real working products than hear about something that may or may not ship a year from now," he said.

Sidell was referring to the latest in a series of Microsoft events in the past few months that were designed to ignite users' interest in the upcoming Windows NT 5.0 — a product that is still more than a year away from shipping. Even so, users and observers acknowledged that the Redmond, Wash., software giant generates potential interest in its products just by talking about them.

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In Seattle 10 days ago, Microsoft officials said the company's total cost of ownership initiative would halve the cost of maintaining networks based on Windows NT 5.0. The claim is based on a combination of four forthcoming technologies: the Active Directory database, self-repairing functions in future versions of the network operating system, the Zero Administration Kit and Intellimirror caching [CW, July 28].

Microsoft said the combination of these facilities will make it easier for users to access information and work collaboratively and reduce network administrators' management tasks. For example, the self-repair features will be able to replace missing system files,

Product hype, page 50

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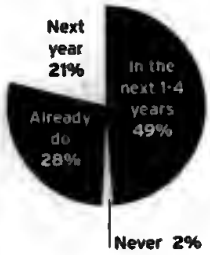

*Groupware that holds the intellectual property of a company in a shared application

Base: 650 IS professionals

Source: Delphi Consulting Group, Inc., Boston

Wolfpack beta

Microsoft Corp. has released the second beta of its clustering software code-named Wolfpack. The Redmond, Wash., software giant said the Microsoft Cluster Server (MSCS) will ship bundled with Windows NT 4.0 Enterprise Edition due later this year. Microsoft is shipping a new version of the MSCS Software Development Kit and application programming interface specifications to help developers create applications that take advantage of the clustering software. MSCS runs on Windows NT Server 4.0 with Service Pack 3 installed. The final release of MSCS will ship by the end of the summer, a Microsoft spokesman said.

LAN-based modem

Shiva Corp. in Billerica, Mass., recently released Shiva Dial-Out software for Microsoft's Windows NT Workstations on networks outfitted with Shiva's remote access server. The software lets PCs make outgoing modem connections, which eliminates the need for individual modems and telephone lines. Shiva customers can download it for free from Shiva's World Wide Web site at www.shiva.com.

Reining in NT servers

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Product hype, page 50

NT server management raises debate over tools

CONTINUED FROM PAGE 49

eration) from Computer Associates International, Inc. or OpenView from Hewlett-Packard Co. Then central operators can apply a management policy across all Windows NT servers, for example, or to diverse servers.

But until the bank deploys TME 10, Guerrero will use AppManager from NetIQ Corp. in Santa Clara, Calif., a tool specifically designed to manage Windows NT servers.

SAVING TIME

When Guerrero needed to check the version of backup software running on 38 servers, he made one query through AppManager instead of spending five minutes connecting to each one and taking notes. "I had my report in the time it took to grab a soda, instead of working three hours," he said.

Another bank that plans to roll out TME 10 will use it first to centrally manage more than 200 Windows NT servers. That won't happen until mid-1998, but Windows NT administration isn't a problem, said James Brown, senior vice president at NationsBank Corp. in Charlotte, N.C.

"TME 10 is right around the corner, so adding new point products now is a tough sell," Brown said.

Some organizations hope to gain an enterprisewide edge more quickly by opting for Unicenter TNG. The suite can require less implementation effort because it offers a self-contained set of highly integrated tools, according to users and analysts.

In just three months, Shared Medical Systems Corp. reduced the number of staff needed to manage 45 internal Windows NT servers from seven to three through Unicenter TNG, according to Larry McDermott, manager of remote server management at the Malvern, Pa., company.

"We'll need this kind of efficiency to manage NT-based services we launch for customers who don't have their own support staff," McDermott said.

Whether sooner through point products or later through an enterprise manager, IS leaders "have to put a stake in the ground and put something to work," Guerrero said. "The longer you wait, the more tools you'll pass by without getting anything done." □

Product hype does little to fuel migration

CONTINUED FROM PAGE 49

and the Intellimirror caching scheme will mean less system downtime, Microsoft officials said.

Users applauded such efforts, but some voiced concerns based on Microsoft's history of oft-postponed deliveries.

Some said they are more concerned with Windows NT's current capabilities. Others acknowledged that although Microsoft still has a long way to go before it fulfills its promises, they are committed to migrating to NT 5.0 — or are intrigued by the possibility.

WAIT-AND-SEE APPROACH

Sidell said he is holding off. He said his firm will realize greater return on its investment by postponing an upgrade from its 200 Windows NT 4.0 servers. "Windows NT 5.0's Active Directory doesn't provide enough of a performance gain to justify the cost of upgrading," he said.

Another executive, David Soetebier, vice president of research at Boatman's Trust Co. in St. Louis, said Microsoft is making progress in a long-term quest to reach enterprise heights with Windows NT.

Charles Schwab's Mike Sidell says he would "rather see real working products than hear about something that may or may not ship a year from now"

Soetebier said Microsoft is "still a PC company trying to be an enterprise company, and Microsoft still has a lot of work to do." However, he said his company expects to migrate to Windows NT 5.0 when it ships.

Michael Crowley, vice president and chief information officer at Rich Products Corp. in Buffalo, N.Y., has a heterogeneous environment that includes Novell, Inc.'s IntranetWare, Windows NT Server and Unix. For now, Crowley said he is satisfied with IntranetWare, but he said Microsoft's cost-of-ownership push could lure him to switch.

The total cost of ownership "is a very enticing carrot. But I don't make any decisions until a product is commercially available and we can test it and determine whether there's a good reason to switch," Crowley said.

Even if Microsoft doesn't present tangible products, its briefing events make an impact, said Clay Ryder, an analyst at Zona Research, Inc. in Redwood City, Calif.

"These events are really for those willing to sit down, listen and get a glimpse of the future," Ryder said. □

Virtual private network saves firm big money

CONTINUED FROM PAGE 49

Transfer Mode highway. Savvis maintains such lanes for others, as well. Users can provide the necessary data access equipment to get data on the highway.

Omron needed a network to let customers access the firm's AS/400 at corporate headquarters. It would be accessible at Omron's main sites, or customers could dial in to the network.

"We needed a simple, affordable way to let our customers order equipment and check those orders electronically," said Barry Voltz, manager of information services at Omron. "We spent a good deal of time checking our options."

Omron considered building its own WAN but estimated it would cost $360,000 per year for communications costs alone. "That doesn't include the salaries of staff I'd need to hire to run our own WAN," Voltz said. The Savvis package came in at $250,000 per year and was much simpler.

"The VPN will also enable traveling Omron employees to visit any office in the U.S. and access the network as if they were sitting at their own desks," Voltz said. Every machine has its own identification, which it can use anywhere on the VPN.

BANDWIDTH BOOST

If bandwidth gets to be a problem, Omron can call Savvis and have them increase it between remote sites and headquarters from fractional T1 to T1. All network sites have access to the Internet via the Schaumberg hub.

The electronics firm considered proposals from MCI Communications Corp. and IBM, but it found them far too expensive and with various shortcomings. Voltz said he considered just running everything over the Internet, but he had security concerns.

Security is a big concern with VPNs, too, experts said.

"The first big question about VPNs is how are you going to handle security because it's a fundamental issue that users need to address beforehand," said Robert Powers, chairman of the Technology Policy Council at the U.S. unit of the Institute of Electrical and Electronic Engineers, Inc. in Washington. "Encryption is a must."

Voltz said workers encrypt all their Notes mail before transmitting it over the VPN. Omron also uses a hardware/software security firewall to lock out potential intruders.

The first phase of the VPN plan involves installing access in 10 locations across the country. The network will be configured in a star topology, with Omron's headquarters located in the middle. In later phases, the network will expand to Canada and South America. □

NEW PRODUCTS

ARESCOM, INC. has announced the Apex 1100, a high-speed Integrated Services Digital Network (ISDN) Basic Rate Interface access router.

According to the Fremont, Calif., company, the Apex 1100 allows an unlimited number of Ethernet LAN users to access a WAN via a single ISDN line. Apex Manager software is included to simplify configuration and line management.

The Apex 1100 costs $679.

Arescom
(510) 445-3638
www.arescom.com

CINCO NETWORKS, INC. has announced NetXRayPro/100S, a Fast Ethernet network monitoring and analysis tool that runs on Windows 95 and Windows NT PCs.

According to the Pleasanton, Calif., company, the single-channel tool can monitor Fast Ethernet traffic at 120,000 packet/sec. and identify network nodes that generate Ethernet errors.

The price is 4,495.

Cinco Networks
(510) 426-1770
www.cinco.com

MICROPLEX SYSTEMS LTD. has announced NetworkEye-Colour Version 1.1, server software that can connect color digital cameras from Connectix Corp. to Ethernet LANs.

According to the Vancouver, British Columbia, firm, the frame server lets users on an Ethernet LAN access color images using browser software such as Netscape Communications Corp.'s Navigator or Microsoft Corp.'s Explorer.

Pricing for both the frame server and a Connectix color camera is $349.

Microplex Systems
(604) 444-4232
www.microplex.com

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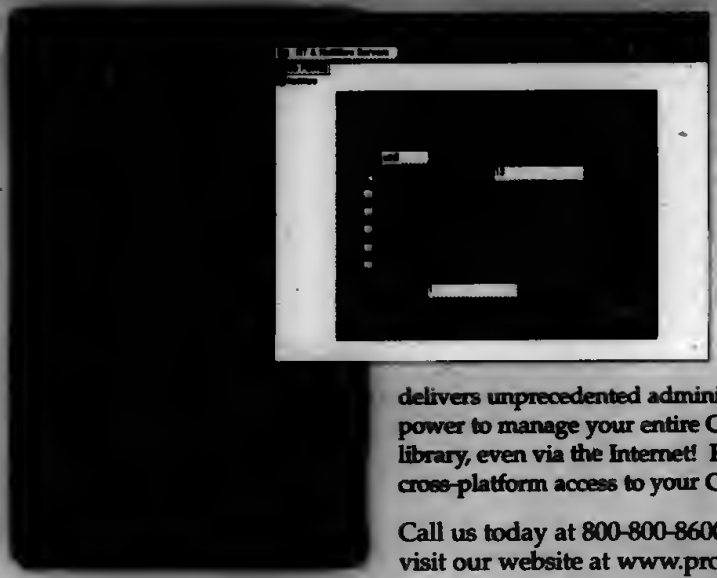

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The Software Minute

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This free Java courseware on the Web is getting a ton of hits. From fundamentals (What is Java?) to business cases (How do we put it to work?) to resources for developers (How can I improve my skills?), you'll find most of what you're looking for in one place at www.ibm.com/java. Along with new product highlights from IBM, Sun, and other Java leaders.

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Briefs

DATA WAREHOUSE SHOPPERS

Corporate business analysts need...
direct access to data warehouses.

Casual users of analysis tools need...
data marts with precalculated reports.

Departmental business analysts need...
data marts oriented to one subject.

Senior executives need...
custom-built executive information systems.

Source: Patricia Seybold Group, Boston

Informix users get NT-friendly

DOUG CHARLES

By Craig Stedman
SAN FRANCISCO

INFORMIX SOFTWARE, INC. and its database users have been among the most devout worshipers at the Unix altar. But even they are starting to heed the call of Windows NT.

Getting serious about Windows NT was Informix's top priority at its user group conference here last month. And users in search of lower computing costs plan to go along for the NT ride, although some said they aren't ready to entrust key corporate applications to the Microsoft Corp. operating system.

For example, CPI Corp. plans to combine Windows NT servers and Informix's OnLine database software to run a point-of-sale application it is developing for the 1,100 portrait studios it operates at Sears, Roebuck and Co.'s retail stores.

The deep pool of Windows-savvy developers "had a big impact on our decision to go with NT," said Timothy Hufker, vice president of information systems at CPI in St. Louis. Because his developers routinely receive offers to jump ship, Hufker said he wants to make sure he can easily find replacements.

But there is "no compelling

Informix, page 57

ONLINE ACCESS

Scientists use Java, CORBA to study DNA

By Sharon Gaudin

SCIENTISTS TRYING to find cures for cancer, heart disease and Alzheimer's disease should be able to get needed research information faster thanks to an object-based combination of CORBA and Java technologies.

Information technology managers at the European BioInformatics Institute in Cambridge, England, are giving scientists worldwide direct online access to the largest database of DNA information in existence.

Instead of the current practice of submitting queries and having workers at the institute sift through the information in the database, more than 10,000 scientists in academic, pharmaceutical and biotechnology laboratories will be able to fire up their browsers and do more detailed searches themselves.

Online access, page 57

Legato bundles backup software with databases

By Nancy Dillon

LEGATO SYSTEMS, INC. has announced agreements with Oracle Corp. and Informix Software, Inc. to bring built-in online backup capabilities to database users.

Beginning in October, all Oracle8 and Informix 7.x databases for Unix and Windows NT will ship with a scaled-down version of Legato's NetWorker 5.0 backup and restore software. The software, installed on a single server, comes with a scheduler for unattended backups and the ability to execute online file and database backups for up to four attached storage devices.

Michael Schoolcraft, a programmer at World Partners in Smyrna, Ga., said Legato's an-

Legato, page 57

Vineyard cultivates J. D. Edwards apps

By Tim Ouellette

WITH THE HELP of what some might view as a vintage system, Robert Mondavi Co. has expanded its business into the world of international trade.

The Oakville, Calif., wine maker has counted on an AS/400 system running a suite of J. D. Edwards & Co. business applications since 1988. Back then, the Napa Valley company was making $94 million per year; now the system handles nearly $300 million per year in wine sales worldwide.

Exports make up less than 10% of revenue, and the company expects that to grow to 20% over the next 10 years.

In the past year, Mondavi has countered the recent California grape shortages by creating international partnership deals to expand its line of wine offerings, something largely untried by other California wine makers. The strategy includes having overseas wineries grow grapes for Mondavi label wines.

FOTO © HILLMAN/PHOTOS EDITORS

J. D. Edwards' World software has enabled Robert Mondavi Co. to expand its winery business

To handle these changes to its business, Mondavi next year will upgrade from J. D. Edwards' World 6.2 suite to Version 7.3 and add a foreign exchange module, said Mary Trauernicht, systems support manager at Mondavi.

The move to World 7.3 opens the door for Mondavi to upgrade to OneWorld, J. D. Edwards'

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Source: Patricia Seybold Group, Boston

Prism deals

Prism Solutions, Inc. in Sunnyvale, Calif., has announced a buying spree aimed at expanding its data warehousing product line beyond the data extraction realm. Prism bought QDB Solutions, Inc., a Cambridge, Mass., maker of software for analyzing data quality, for $7 million in cash and stock. It also acquired data replication software by Peregrine/Bridge Transfer Corp. in Austin, Texas. In addition, Prism bought its Australian distributor and will turn it into an Asia/Pacific marketing subsidiary. Rival Carleton Corp. in Billerica, Mass., has also been expanding its warehousing tools through licensing deals with other vendors, including QDB.

Acxiom/Exchange deal

Acxiom Corp. in Conway, Ark., last month announced that it will integrate customer information databases it develops and maintains for banks, credit-card companies and other clients with marketing campaign management software from Exchange Applications, Inc. in Boston. Acxiom will train its engineers to install and support Exchange's VelEx, which enables marketing managers to design promotions that can be targeted at small numbers of customers who have similar buying habits.

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Informix users

CONTINUED FROM PAGE 55

reason" to switch CPI's corporate back-office operations to Windows NT, Hufker said. The company's Informix-based Unix applications are humming along smoothly, and NT still needs another year or two to become "a proven, mature product," he said.

Visa International has lobbied Informix to be more NT-friendly for the past 18 months.

– John Valente, Visa

The situation is similar in the city of Aurora, Colo., another Informix user. Looking to lower operating costs, officials in Aurora expect to turn to Windows NT for some lower-end database applications such as tracking constituent complaints, said Janice Richardson, manager of the city's systems and operations division.

But more critical government functions — including a new police and fire dispatch system that is due to be installed late this year — will likely stay on Unix servers. "NT just isn't mature yet," Richardson said. For now, she said, the city wants to limit it to applications "where nobody dies because an ambulance doesn't get dispatched."

Even so, Informix executives are counting heavily on Windows NT to help pull the Menlo Park, Calif., company out of the abyss it fell in to with a $140 million first-quarter loss. Informix sold only about $20 million worth of NT databases last year, and it cited a lack of focused NT marketing as a key cause of the first-quarter debacle.

As expected, the company tried to demonstrate here that it cares a lot about NT by announcing plans for parallel database support, a new reseller marketing program and a series of performance benchmarks (CW, July 21).

John Valente, senior vice president of the Information Applications division at Visa International, Inc. in San Francisco, said the credit-card consortium has lobbied Informix to be more NT-friendly for the past 18 months.

The banks that make up the consortium "are telling us we need to be there [with Windows NT], and we passed that message on to Informix," Valente said. Visa's client/server spending is still weighted about 70-30 toward Unix, but resources are gradually shifting to NT, especially for low-end uses, he said. □

Online access to research

CONTINUED FROM PAGE 55

EUROPEAN BIOINFORMATICS INSTITUTE

- **Has the largest database of DNA sequences, with 1 billion of those sequences**
- **Helps scientists in their search of sequence mutations that cause disease**
- **Is a division of the European Molecular Biology Laboratory**
- **Is a nonprofit organization funded by 14 nations, including the U.K. and Israel**

And they will have access to the information because developers are using the Java programming language and Common Object Request Broker Architecture (CORBA), the cross-platform plumbing that connects databases, clients and servers, to make the legacy information easily available.

The developers are using development tools and a server from Persistence Software, Inc. in San Mateo, Calif., to make the transition easier.

"Now, scientists can't get at the DNA information in our databases at all," said Graham Cameron, head of services at the institute. "When we get this up and running, it will be much more interactive. They know exactly what they need and can make much richer queries than we can for them. We always took the sledgehammer approach, but they can be much more finely tuned."

Graham said the institute mainly has Oracle Corp. databases but has many others from a slew of vendors. They hold information on about a billion different strands of DNA sequences. With so many databases, it is hard to access them if a user doesn't know exactly where the information is.

Graham and his developers used Persistence's Object Builder to create wrappers that encapsulate chunks of the database information and enable them to be accessed and shipped to the front end. They also use Persistence's Object Server, which takes the query and does the digging. Object request brokers from Iona Technologies, Inc., Visigenic Software, Inc. and SunSoft, Inc. ship the information to the client.

PLATFORM-INDEPENDENT

The institute also uses Java on the front end to ship the information across the Internet to the scientists. Because the Persistence tools, CORBA and Java are all platform-independent, they can access information on any of the databases and ship it easily anywhere on the Internet.

"The Persistence technology makes it easier for them to transform an old legacy relational database into virtually an object-oriented database without actually having to build a whole new database," said Karen Boucher, director of The Standish Group International, Inc. in Dennis, Mass. "With Persistence, they're throwing an extra layer over the database like a blanket. That helps wrap the information into usable objects."

Richard Browett, technical director at Valtech Ltd., an object-oriented consulting and training firm in London, said changing the way scientists access information should speed up research.

"By wrapping all the legacy information and letting scientists actually get their hands on it, we're serving them better," Browett said. "And that's the focus." □

Legato bundles software

CONTINUED FROM PAGE 55

nouncement was good news. He also called Informix's current backup system a "real pain." World Partners is an order clearinghouse for telecommunications carriers.

"It would be nice to have a [graphical user interface] and an automated scheduler. Right now, Informix's archive system is just not rewarding to work with," Schoolcraft said.

UTILITY NOT NEEDED

According to Legato, users no longer will have to integrate Legato modules with Informix and Oracle database utilities. The NetWorker backup software should inherit all configuration information from the database, officials at the Palo Alto, Calif.-based company said.

"I see a gigantic benefit to users in not having to write the [Enterprise Backup Utility] scripts for Oracle backup," said John Walton, a systems administrator at shipping giant Federal Express Corp. in Memphis. Walton backs up two Oracle databases that house 450G bytes of data using NetWorker and Legato's database module for Oracle.

> "It would be nice to have a [graphical user interface] and an automated scheduler"
>
> – Michael Schoolcraft, World Partners

The bundling deal could be a boon for Legato, said Paul Mason, a storage management analyst at International Data Corp. in Framingham, Mass. "The version of NetWorker that these users will get will be perfectly adequate for a first installation and will provide an entry point into Legato's breadth of multiplatform products," he said.

But according to Patricia Adams, a senior storage analyst at Gartner Group, Inc. in Stamford, Conn., NetWorker may not be something new users need right away.

"Everybody's data is growing. If users implement an intranet today, they may see their data expand by 50%, and this might make enhanced backup something that they need six to 18 months down the line," she said.

"Integration of a good backup system into Oracle could be useful to me in the future because it would mean I wouldn't have to go through a third party," said Walt Wills, an MIS analyst at Inflation Systems, Inc., a manufacturer of air bag components in La Grange, Ga.

Wills manages a 500M-byte Oracle database that the company archives through data exportation to available storage resources. □

Vineyard cultivates apps

CONTINUED FROM PAGE 55

package that provides Internet access to AS/400 data. It also supports modules on other Unix, Windows NT or S/390 platforms if users want to expand.

Trauernicht said no platform decisions have been made yet, though Mondavi will upgrade to one of the RISC AS/400s that IBM is shipping this fall.

Competing applications running on Unix or Windows NT aren't in the cards yet for Mondavi, mainly because J. D. Edwards' World has let them expand the business and alter pieces of the system.

"There is nothing like standardization in the wine business," said Nancy Sellers, Mondavi's accounting manager. "We keep choosing J. D. Edwards modules because they offer us incredible flexibility and user-controlled definitions."

For example, Mondavi, like all companies in the alcohol beverage business, is highly regulated by federal, state and even county governments. The modification Mondavi made, which allows the wine maker to report wine taxes to the government, was important because "the government has to have a high comfort level with the way we move wine around," Sellers said.

Denver-based J. D. Edwards is also developing a European currency conversion tool, due next year, for users such as Mondavi to handle Europe's transition to a single currency.

"With our new international joint ventures in Italy, France and Chile and growth in export sales, it really expanded our needs for the new foreign currency module," said Tobin Gintert, financial reporting manager at Mondavi.

Mondavi's expanded use of World modules will also give more users direct access to financial data that was previously available only in paper reports. □

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They roam the streets.

And come into your businesses.

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Others say they are maniacs

who have so many formulas

running through their heads

and scribble so many configurations

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Briefs

1996 federal government hardware units purchased

Servers*	10,300
PC servers	35,900
Workstations	44,000
PC desktops	473,500

*Units

Midrange users weigh migration

▸ *Year 2000 conversion forces hard choices*

By Jaikumar Vijayan

THE YEAR 2000 issue is putting users of old minicomputers between a rock and a hard place.

Should they stay? A dearth of skills and software tools make date conversion jobs a bigger nightmare for midrange users, compared with their mainframe counterparts [CW, June 23].

Should they go? Users considering migration to newer computers face the cost and risks involved in migrating applications off trusted old platforms.

"Whatever we do, it is going to be a really major decision for us, because we are talking about applications that run our business," said Steve Pounds, controller at Security Forces, Inc., a provider of security services in Charlotte, N.C.

Type of business: Supp[illegible]

Type of system: Data General Aviion based on Motorola 88000, Unix

Types of applications: Financial

Using the system since: 1982

Status: Only one vendor knows how to do the year 2000 conversion. Security Forces is undecided about whether to go ahead with the conversion or migrate.

Factors that will affect the decision: Migration means more application availability, capabilities and error-free software. But it involves unforseen risks and costs.

The company, which has used a Data General Corp. minicomputer for 15 years, hasn't decided whether it wants to move to a new platform or try to fix the current one. Only one software contractor knows the application software well enough to do a conversion.

So, the company is examining a migration to a new system. But the still-unknown costs and risks of migrating core applications slows a decision. "We simply don't know what's on the horizon for us right now," Pounds said.

TOUGH CHOICES

For most minicomputer users, a successful migration to a new platform such as Windows NT means error-free software and easy availability of new packaged applications and capabilities. But getting there means making hard decisions now, analysts said.

For example, users such as Security Forces still run vital applications on older proprietary midrange systems. Those systems include minicomputers from vendors such as Digital Equipment Corp.'s VAX/VMS systems, DG's Eclipse platforms, Hewlett-Packard Co.'s HP 3000, IBM's AS/400 and Wang Laboratories, Inc.'s Wang VS platforms.

Typically, those systems have

Midrange users, page 62

Dell invests in Pentium II workstations

By April Jacobs
NEW YORK

DELL COMPUTER CORP. last week released its first line of Pentium II workstations, targeted at compute-intensive applications and priced to undercut the competition.

The Round Rock, Texas, computer maker based its three new workstations, all in the Workstation 400 family, on Intel Corp.'s Pentium II chip, which was announced in May. The Pentium II has been embraced as a high-performance desktop platform in the financial and engineering communities by companies such as Merrill Lynch & Co. and the financial service arm of Prudential Securities, Inc.

EXCHANGE SEAT

With that in mind, Dell rolled out its new machines at the Nasdaq Stock Exchange in New York. The exchange uses Dell servers to power online feeds to more than 400,000 users who receive its minute-by-minute trading and stock information

Dell, page 62

Need for speedy backup drives moves to tape

▸ *DLT libraries less costly, more reliable*

By Matt Hamblen

WITH THE DIGITAL storage world exploding due to data warehouses and larger graphics and video files, systems administrators are scrambling to find inexpensive ways to back up data quickly and reliably.

Tape storage, which has become much faster and more reliable to use — especially with the growing acceptance of digital linear tape (DLT) in the past year — is the answer for many administrators of midsize to large networks. And tape storage costs less than setting up a backup system using redundant hard disk or optical technology, analysts said.

CLOSER LOOK

Recently, automated tape backup systems have become the rage for users of midsize systems, following a similar pattern in higher-end systems. Many vendors sell tape libraries, devices that have one or more drives and often dozens of cartridges that are exchanged by a robot mechanism.

Austen Green, a senior network analyst at KPMG Peat Marwick, a consulting company in London, has installed four DLT libraries from ATL Products, Inc. in Irvine, Calif. The libraries can handle his backup needs of 12T bytes, with plenty of room for growth.

"I come from a mainframe background and fully understand why a backup is necessary and why a good disaster-

Tape storage, page 63

POPULAR MIDRANGE TAPE DRIVES

Product	1997 shipments*	Capacity	Transfer rate
DLT 4000[1]	203,000	20G bytes	1.5M byte/sec.
Mammoth[2]	122,000	20G bytes	3M byte/sec.
SDX-300[2]	50,000	25G bytes	3M byte/sec.
DDS-3[3]	499,000	12G bytes	1M byte/sec.
MLR-1[3]	50,000	13G bytes	3M byte/sec.

Source: Peripheral Research Corp., Santa Barbara, Calif.

Briefs

Storage file server

Creative Design Solutions, Inc. in Santa Clara, Calif., has rolled out a low-cost, network-attached storage file server for Windows NT environments. The Plug & Stor 100 can be installed without shutting down the network or changing its configuration. It was designed for small offices and workgroups. It uses CD-ROM, disk or removable storage media and can be configured from a PC or a network computer using a World Wide Web browser. It costs $1,349. "This is a pure file server," said Peter Harvey, Creative Design's chairman and CEO. "It isn't intended as a replacement for a [Windows NT] applications server."

MTI storage

MTI Technology Corp. in Anaheim, Calif., next week will announce the Gladiator 3200 ESS RAID Array, a midrange Unix disk storage system. The array includes an updated controller that doubles performance over the existing 3100 systems. The three-bay cabinet includes up to 2T bytes of data capacity and up to 8G bytes of read cache to speed user access to files. Prices start at $472,520.

Bull Unix servers

Bull HN Information Systems, Inc. in Billerica, Mass., has announced Unix servers that run on IBM's AIX operating system. The Escala E two-way and Escala T four-way servers include PowerPC 604E processors, internal disk mirroring support and UltraWide SCSI controllers. Pricing for the servers start at $15,170.

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Workstations*	44,000
PC desktops	473,500

*Unix

Source: International Data Corp., Framingham, Mass.

Midrange users weigh migration

▸ *Year 2000 conversion forces hard choices*

By Jaikumar Vijayan

THE YEAR 2000 issue is putting users of old minicomputers between a rock and a hard place.

Should they stay? A dearth of skills and software tools make date conversion jobs a bigger nightmare for midrange users, compared with their mainframe counterparts [CW, June 23].

Should they go? Users considering migration to newer computers face the cost and risks involved in migrating applications off trusted old platforms.

"Whatever we do, it is going to be a really major decision for us, because we are talking about applications that run our business," said Steve Pounds, controller at Security Forces, Inc., a provider of security services in Charlotte, N.C.

**Security Forces, Inc.
Charlotte, N.C.**

Type of business: Supplier of security services

Type of system: Data General Aviion based on Motorola 88000, Unix

Types of applications: Financial

Using the system since: 1982

Status: Only one vendor knows how to do the year 2000 conversion. Security Forces is undecided about whether to go ahead with the conversion or migrate.

Factors that will affect the decision: Migration means more application availability, capabilities and error-free software. But it involves unforseen risks and costs.

The company, which has used a Data General Corp. minicomputer for 15 years, hasn't decided whether it wants to move to a new platform or try to fix the current one. Only one software contractor knows the application software well enough to do a conversion.

So, the company is examining a migration to a new system. But the still-unknown costs and risks of migrating core applications slows a decision. "We simply don't know what's on the horizon for us right now," Pounds said.

TOUGH CHOICES

For most minicomputer users, a successful migration to a new platform such as Windows NT means error-free software and easy availability of new packaged applications and capabilities. But getting there means making hard decisions now, analysts said.

For example, users such as Security Forces still run vital applications on older proprietary midrange systems. Those systems include minicomputers from vendors such as Digital Equipment Corp.'s VAX/VMS systems, DG's Eclipse platforms, Hewlett-Packard Co.'s HP 3000, IBM's AS/400 and Wang Laboratories, Inc.'s Wang VS platforms.

Typically, those systems have

Midrange users, page 62

Dell invests in Pentium II workstations

By April Jacobs
NEW YORK

DELL COMPUTER CORP. last week released its first line of Pentium II workstations, targeted at compute-intensive applications and priced to undercut the competition.

The Round Rock, Texas, computer maker based its three new workstations, all in the Workstation 400 family, on Intel Corp.'s Pentium II chip, which was announced in May. The Pentium II has been embraced as a high-performance desktop platform in the financial and engineering communities by companies such as Merrill Lynch & Co. and the financial service arm of Prudential Securities, Inc.

EXCHANGE SEAT

With that in mind, Dell rolled out its new machines at the Nasdaq Stock Exchange in New York. The exchange uses Dell servers to power online feeds to more than 400,000 users who receive its minute-by-minute trading and stock information

Dell, page 62

Need for speedy backup drives moves to tape

▸ *DLT libraries less costly, more reliable*

By Matt Hamblen

CLOSER LOOK
Tape Storage

WITH THE DIGITAL storage world exploding due to data warehouses and larger graphics and video files, systems administrators are scrambling to find inexpensive ways to back up data quickly and reliably.

Tape storage, which has become much faster and more reliable to use — especially with the growing acceptance of digital linear tape (DLT) in the past year — is the answer for many administrators of midsize to large networks. And tape storage costs less than setting up a backup system using redundant hard disk or optical technology, analysts said.

Recently, automated tape backup systems have become the rage for users of midsize systems, following a similar pattern in higher-end systems. Many vendors sell tape libraries, devices that have one or more drives and often dozens of cartridges that are exchanged by a robot mechanism.

Austen Green, a senior network analyst at KPMG Peat Marwick, a consulting company in London, has installed four DLT libraries from ATL Products, Inc. in Irvine, Calif. The libraries can handle his backup needs of 12T bytes, with plenty of room for growth.

"I come from a mainframe background and fully understand why a backup is necessary and why a good disaster-

Tape storage, page 63

POPULAR MIDRANGE TAPE DRIVES

Product	1997 shipments*	Capacity	Transfer rate
DLT 4000[1]	203,000	20G bytes	1.5M byte/sec.
Mammoth[2]	122,000	20G bytes	3M byte/sec.
SDX-300[2]	50,000	25G bytes	3M byte/sec.
DDS-3[3]	499,000	12G bytes	1M byte/sec.
MLR-1[3]	50,000	13G bytes	3M byte/sec.

*Projected Vendors: 1-Quantum, 2-Exabyte, 3-Various vendors

Source: Peripheral Research Corp., Santa Barbara, Calif.

Dell invests in Pentium II

CONTINUED FROM PAGE 61

services.

Nasdaq President Alfred Berkeley said high-speed processing, such as what is available on Dell's new workstations, is key for users who need to apply the knowledge they receive as quickly as possible on the trading floor or in advising customers.

"In this business, time really is money," Berkeley said, noting that high-speed computing has changed the way trading is done, not only by speeding up transactions, but by increasing them. "People used to hold on to stock, but now more people are in business just to trade it."

Processors for Dell's new Workstation 400 releases range from a single 200-MHz Pentium II to a dual 300-MHz Pentium II chip.

Dell faces stiff competition. It will compete with vendors such as Houston-based Compaq Computer Corp., which has the PW600, and Armonk, N.Y.-based IBM, which offers the Intellistation Pro M. Both are Pentium II-based machines. But Dell is playing the price/performance game, pricing its Workstation well below the competition.

For example, the Workstation 400 with a 300-MHz processor costs $7,278 — well below Compaq's PW 6000, which costs $8,965. Both machines include a 21-in. monitor and identical hard drive and graphics configurations. IBM weighs in at the high end, pricing its Intellistation Pro M at $9,975 without a monitor, according to a comparison study by International Data Corp. (IDC) in Framingham, Mass.

IDC also gave favorable ratings for Dell's entry into the market, particularly in terms of its competitive pricing. But IDC noted that it won't be easy for Dell to move up the technical food chain.

Other analysts agreed.

"Dell is absolutely following on the heels of IBM and Hewlett-Packard as they enter in to the workstation business. IBM is clear and away the leader with its Intellistation, because they have the best offering in terms of systems management support," said John Dunkle, president of Workgroup Strategic Services, Inc. in Portsmouth, N.H.□

Midrange users

CONTINUED FROM PAGE 61

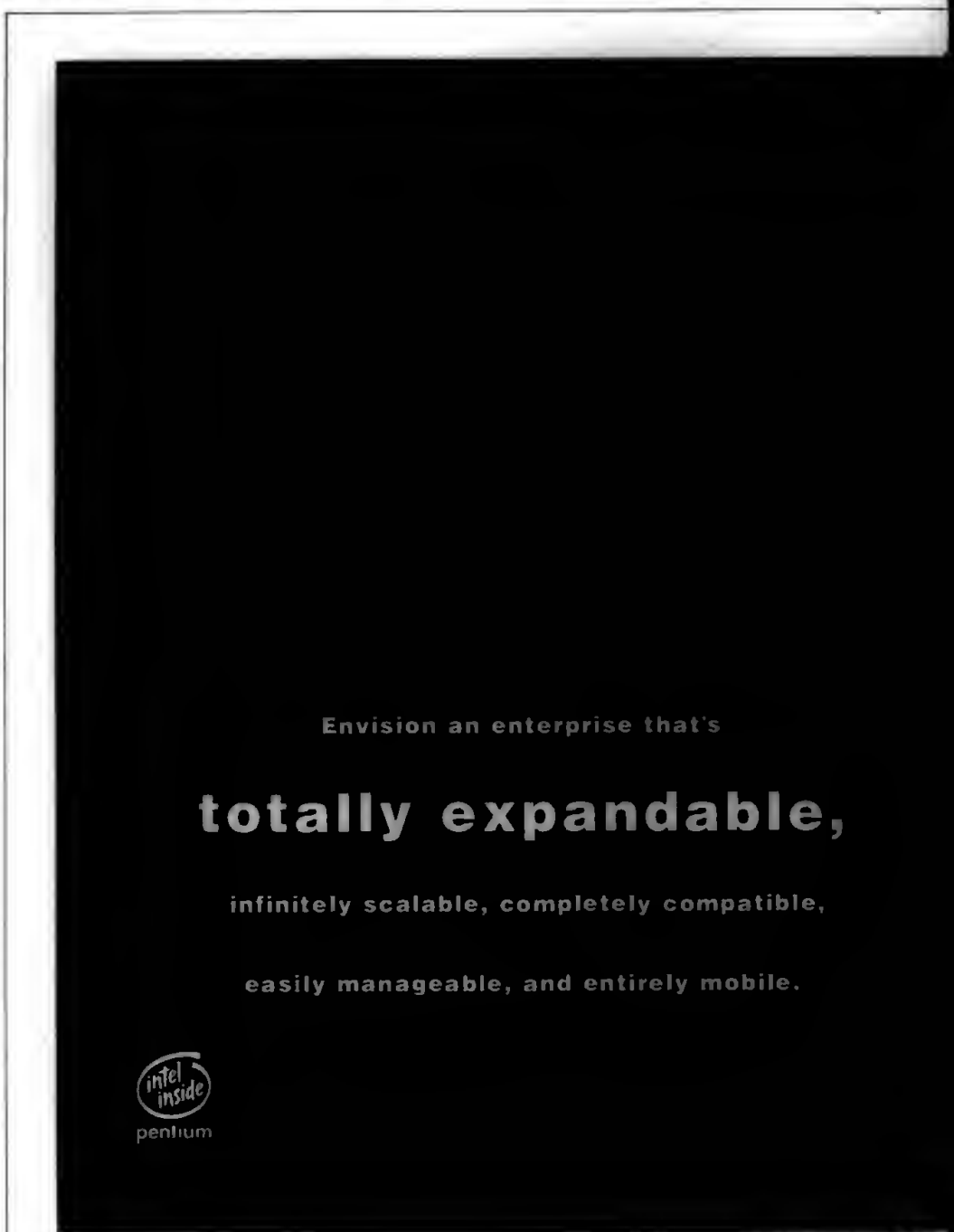
been used to run industry-specific packaged applications or highly customized software sold and maintained by independent software vendors and third-party resellers. With support for the highly specialized platforms dwindling rapidly over the years, there is little help available to handle year 2000 conversion tasks.

"But the effort to convert [such applications] to another platform is somewhat significant," said Lamar Logan, CEO at Logan Lumber Co. in Tampa, Fla.

Like other midrange users, Logan Lumber uses packaged software it purchased from an application developer more than a decade ago to run its financial programs on a Wang VS platform. The vendor hasn't upgraded the package in nearly eight years and hasn't committed to a delivery date or pricing on a year 2000-compliant version of the package.

But Logan Lumber prefers to make the existing applications year 2000-compliant rather than migrate to a new platform. The company has the source code to its applications and has hired a consultant to do the conversion work.

Donald Winterhalter, president of Aurora Systems, Inc. in Plaistow, N.H., which specializes in Wang VS systems, said tough year 2000 choices pervade the legacy midrange user shops. "On the one hand, [minicomputer users] would like to use the year 2000 issue as an excuse to go from old technology to new technology," Winterhalter said. "On the other hand, they are concerned that migration efforts this late in the game may not be as successful as they had hoped for," causing even bigger problems down the road, with less time to resolve them. □



Tape storage draws midrange

CONTINUED FROM PAGE 61

recovery plan will pay off," Green said. "During the bombing two years ago in London's financial area, nine companies went out of business just because they could not restart their [information and related] operations."

At KPMG's London office, data is usually kept online with hard disk RAID systems for about six weeks, then moved to near-online optical storage systems and finally to tape after about eight weeks, Green said.

Hard disk and optical storage media would have cost KPMG many times as much as tape, which costs about $90 for a 40G-byte cassette, Green said. Restoring a file from tape takes about five minutes.

But DLT doesn't appeal to everyone. Tony McGinnis, a staff engineer at Georgia Power Co. in Atlanta, said his company recently purchased an Exabyte 480 tape library from Exabyte Corp. in Boulder, Colo., which includes four drives and 80 tape cassettes that use 8mm tape. That tape costs less than DLT, he said.

McGinnis said Georgia Power bought the library primarily to perform unattended backups at night, instead of hiring a worker to perform the task. Before the library was installed, backups were done during the workday and administrators worried about potential network bottlenecks.

"Most of the data we back up tends to span beyond a 14G-byte tape, so the ability to automate helped solve that problem," McGinnis said. "The library has made life a lot simpler."

McGinnis oversees backup of real-time systems data, which is called upon at least twice a week, mainly for training purposes in handling Georgia Power's storage grid. After it has been online for 14 days, the data is kept on tape for a year.

McGinnis' decision not to go with DLT is interesting, analysts said, because so many users in the past year have bought DLT systems for their ability to quickly transfer data.

"I fully understand ... why a good disaster-recovery plan will pay off"

"Over the past year, it's been DLT and everything else," said Bob Amatruda, a senior analyst for tape storage at International Data Corp. in Framingham, Mass. "Backup windows are shorter, and people want to work around the clock, so the IS guys are in a pickle and have shorter times to backups, so there's a push toward the tape library."

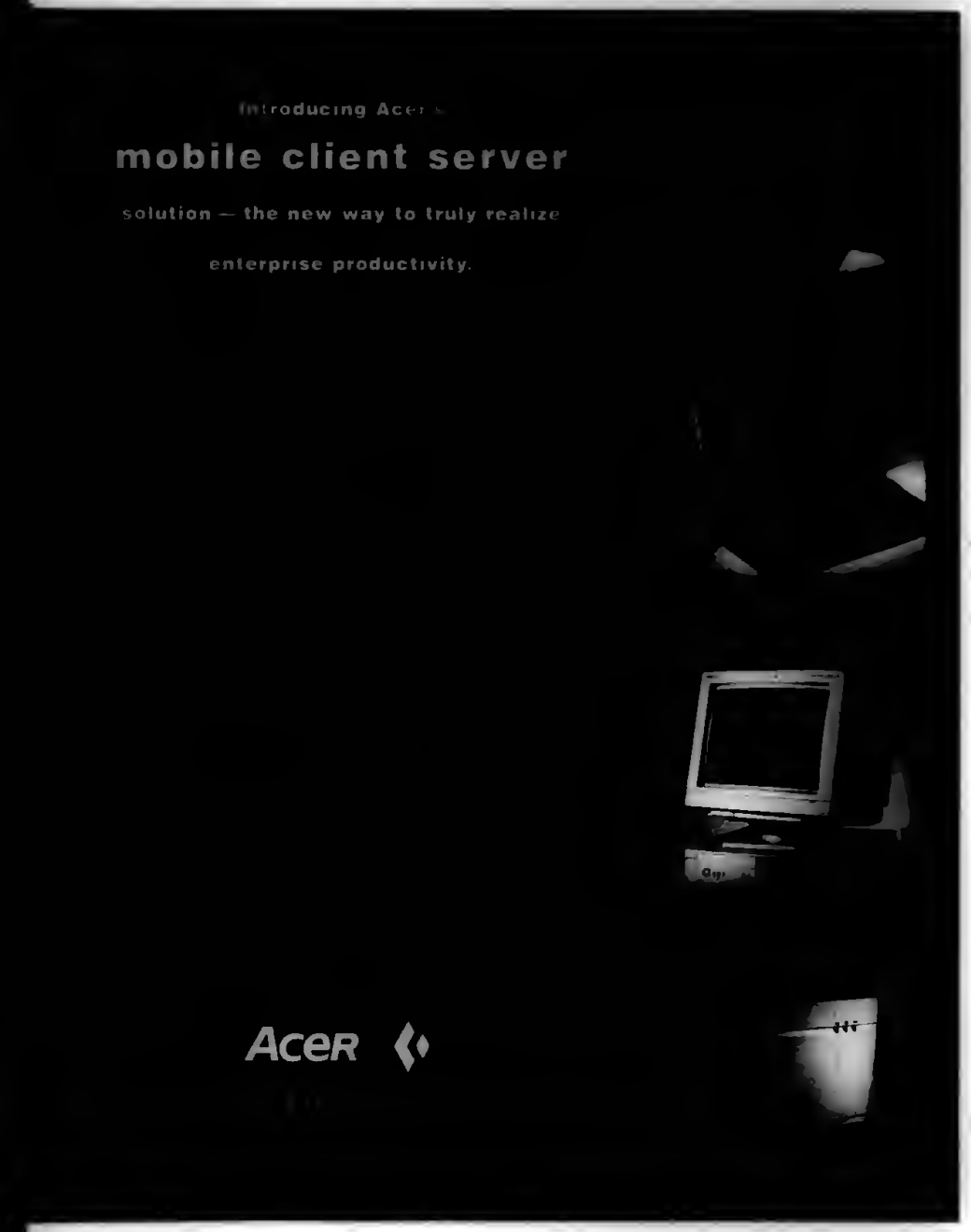
Quantum Corp. in Milpitas, Calif., produces DLT for many manufacturers. Quantum officials said they will try to parlay DLT's success at the high end to midrange storage users. Tape product sales at Quantum jumped 117% in the fiscal year ended March 31, to $728 million, company officials said.

SUPPLY AND DEMAND

It is in the midrange market where information systems administrators should be careful, because "people are racing out to buy DLT [and other high transfer rate] drives, but very few vendors can supply them," said Michael Peterson, president of Strategic Research Corp. in Santa Barbara, Calif.

Peterson said administrators need to be careful when purchasing any drive that boasts high transfer rates if their network servers, software and bus allow for only a fraction of that speed. "Most backups are at 1M byte/sec. or less, so why buy a 5M byte/sec. drive?" Peterson said.

Peterson said IS managers should build a relationship with a tape vendor to ensure good service and support and to build systems that emphasize the reliable recovery of data, not just backing it up as if it will never be used. □



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Managing

WHEN WORLDS COLLIDE

Your IS staff is all techie and you're not? Don't worry, you CAN lead them. Just don't hide your lack of technical smarts.

Wyette Spotts came from outside IS to replace a highly popular manager at Universal Underwriters Group in Overland Park, Kan. His IS staff didn't want him. But Spotts focused on his strengths and worked in the trenches with his staff members. They eventually nominated him for a performance award.

STEVE CURTIS

BY KATHLEEN MELYMUKA

HE'S A NICE GUY, A SMART GUY, Harvard MBA, four years' successful managerial experience, knows how to use a computer.

Information systems is a mixed bag of Unix, PCs, Macintoshes, internal and external webs and banks of modems that support a worldwide, distributed company.

Just appointed to direct this shop, he takes the whole IS staff off-site for a two-day, midweek teamwork exercise. While they're gone, all the modems go down. For two days, the nationwide web of sales offices and all the development offices around the world can't communicate.

"As a manager, taking them off-site was a smart thing to do," says Johanna Rothman, a principal at Rothman Consulting Group, Inc. in Arlington, Mass. "But as an MIS manager, it was a significantly less intelligent thing to do."

To those who say if you can manage, you can manage techies,

When worlds collide, page 66

WHEN WORLDS COLLIDE

CONTINUED FROM PAGE 65

Rothman has one response: "You are so wrong!"

Still, these days it's common to see businesspeople leading technical people. "Using nontechnical leaders is symbolic," says Jerry Kanter director of the Center for Information Management Studies at Babson College in Wellesley, Mass. "It shows that it's very important to have business management as the driving force. It's also effective if you get it right." Getting it right requires a quick study with the political and personal skills to plow the road for the team. It takes someone with intuition and candor who can recognize and adjust for strengths and weaknesses, someone who knows when to intervene and when to hang back. It also takes the sensitivity to understand what makes techies tick.

PAVE THE WAY

"Be clear that your job is to manage," says Naomi Karten, president of Karten Associates, a consulting firm in Randolph, Mass., that specializes in customer service. "Your job is to pave the way, to clear the roadblocks and make it possible for the technical experts to do what they need to do."

That's what Wyette Spotts did. He was plucked from the internal auditing department at Universal Underwriters Group in Overland Park, Kan., brought into IS and eventually put in charge of the claims system. "They didn't want me," he recalls of his technical team. "I was an auditor. They didn't think I belonged."

The team had problems. "Clients were unhappy, there was no process, no control of what was getting done, when, by whom and if ever," Spotts says.

But the manager he had replaced had been popular. "He knew the system, and I didn't know squat," Spotts recalls.

Because he knew so little about the system, Spotts concentrated on what he did know from his auditing experience, and that was the entire company hierarchy. "Because I was connected, I was able to get through some political and personal barriers to getting things done. That's partly how I got accepted," he says.

After six months, the staff that hadn't wanted Spotts nominated him for a performance award. Eight years and many challenges later, Spotts is now manager of systems and programming at the company.

Kathy Kilduff is another nontechnical manager who got it right from the start. As a first-grade teacher in a saturated job market, she was hired by Honeywell, Inc. in the early 1980s to manage its new PC training and information center. "Later, I said to my husband, 'I wonder what an information center is,'" she recalls.

But she jumped right in. "You have to sort of be a sponge but also have a network of people who can be accountable for depth and breadth," she says. "I never sell myself as a technologist, but I am smart enough to know what questions to ask and where to get answers."

JOB 1: WIN THEM OVER

The first order of business for a nontechnical manager, Kilduff says, is to win the techies' respect. At Raytheon Co., she managed to do that while rolling out an enterprisewide human resources and payroll system.

Initially, the systems folks were underwhelmed. "I was dealing with the old guard who had been there 40 years, literally in the basement of the company, with no windows, dealing with a system they had dealt with their whole careers," she says. "And I'm saying, 'Boy, have I got something good for you!' And the tough old [operations] guys said, 'You think so.' So we made them part of the solution," she says.

Kilduff brought in the final vendor candidates for road tests and invited the operations guys up from the basement to try to crash the systems. "They all said, 'I'm going to break this,'" she recalls. "They worked double shifts. They stayed day and night. Once they really looked at the new hardware, it was like giving a child candy. I had hit on what they intuitively cared about anyway: technology."

Kilduff advises managers to "bridge that gap between us and them, and let everybody be expert in whatever they do best." It's worked for Kilduff, who has been managing technical people for 15 years and is currently IS program manager for customer service worldwide at EMC Corp. in Hopkinton, Mass. EMC produces high-end information storage systems.

Janice Wilcox at Advanced Technology Systems in McLean, Va., is a textbook example of a nontechnical manager who complements her people.

As task leader for an intranet project at the U.S. Department of Housing and Urban Development, Wilcox doesn't delve into the nuts and bolts of technology.

At a meeting with clients, "a set of requirements will set off a bunch of bells in my head, but that may not mean much to Janice," says Keith Fosberg, a senior programmer analyst. "So we have to sit down afterwards and translate that into terms like 'use of personnel.'"

On the other hand, Wilcox handles the clients. For example, despite a Netscape Communications Corp. standard on the intranet project, one group of customers wanted to use Microsoft Corp. tools. "To those of us who have to build this whole thing, that's very annoying," Fosberg says. "So I [tell] Janice why it would cause problems, and she puts it all in nice, presentable order that the customer will understand — which is something I would not be terribly great at."

"Make sure you get it," Wilcox says. "Listen, and spit it back out in your own terms so they can contradict you or say, 'Yes, that's exactly what I mean.'"

ASSESSING THE PROBLEM

Things were already going wrong when Roccie Pisano at Computer Task Group, Inc. in Buffalo, N.Y., became site manager of a 40-person technical staff that supported the Eastman Kodak Co.'s worldwide help desk in Rochester.

"My initial reception was mixed at best," says Pisano, whose background is in small business. "The help desk is a stressful environment anyway, and people had been on the desk for years. They needed to move on to better themselves."

Pisano made it happen.

"I had been a help desk technician for four years when Roccie came," Diana Wenner says. "I had been through different managers of different technical abilities, but I hadn't had a working rapport with anyone where I had been motivated to try to do more.

"Roccie encouraged me. He said, 'You've got the potential to do more. Why haven't you? What can we do for you?' He's a very good motivator. He promoted me first to team lead and I said, 'I can't do it. I can't do it.' He said 'Yes, you can!'

"I did that, and now I've moved on to help desk supervisor," Wenner says.

"I helped them at the expense of our own operation," Pisano recalls. "We were short-staffed, and it was very difficult, but we did it and stabilized. And that's helped me earn the respect of the staff."

The bottom line for nontechnical managers is getting everyone to understand that the project really isn't technical, says Al Walker, a principal at the consulting firm Towers Perrin and global head of its Human Resources Information Management project in Parsippany, N.J.

"The end of the game is cut our inventory, speed our products to market. It's a project to deliver outcomes, and IT is a part of that," he says. "The whole thing is really about leadership." □

Melymuka is a freelance writer in Duxbury, Mass.

EARNING RESPECT

SOME TIPS FOR THE NONTECHIES:

- **Never try to fake it. Don't pretend to know more than you do.**
- **Don't be apologetic. Technology isn't your job; it's theirs. Your job is to manage.**
- **Talk about what you expect from them and what they expect from you.**
- **Listen to your people and ask them to explain what you don't understand. You'll be helping them communicate better as you learn.**
- **Share your perspective. If you know something they don't know, tell them.**
- **Make sure deadlines are realistic. Missed deadlines damage morale and resumes.**
- **Give them room. Techies like nothing better than to be left alone to do their work.**
- **Study. You need to learn at least enough to ask the right questions.**
- **Find out who you can trust, and trust them.**
- **Pick the person least like you as your second in command.**
- **Sympathize with their problems. A lot of technology is so new even the techies don't have it down yet.**
- **Ask them what they need and what they want for the present and future. Help them achieve their career aspirations.**
- **Recognize and reward their contributions. Make sure that higher-ups recognize them as well.**

COMPUTERWORLD

Want to learn more about how nontechnical managers and technical personnel can consult peacefully? Listen to IS management expert David Foote this week at our Web site (www.computerworld.com).

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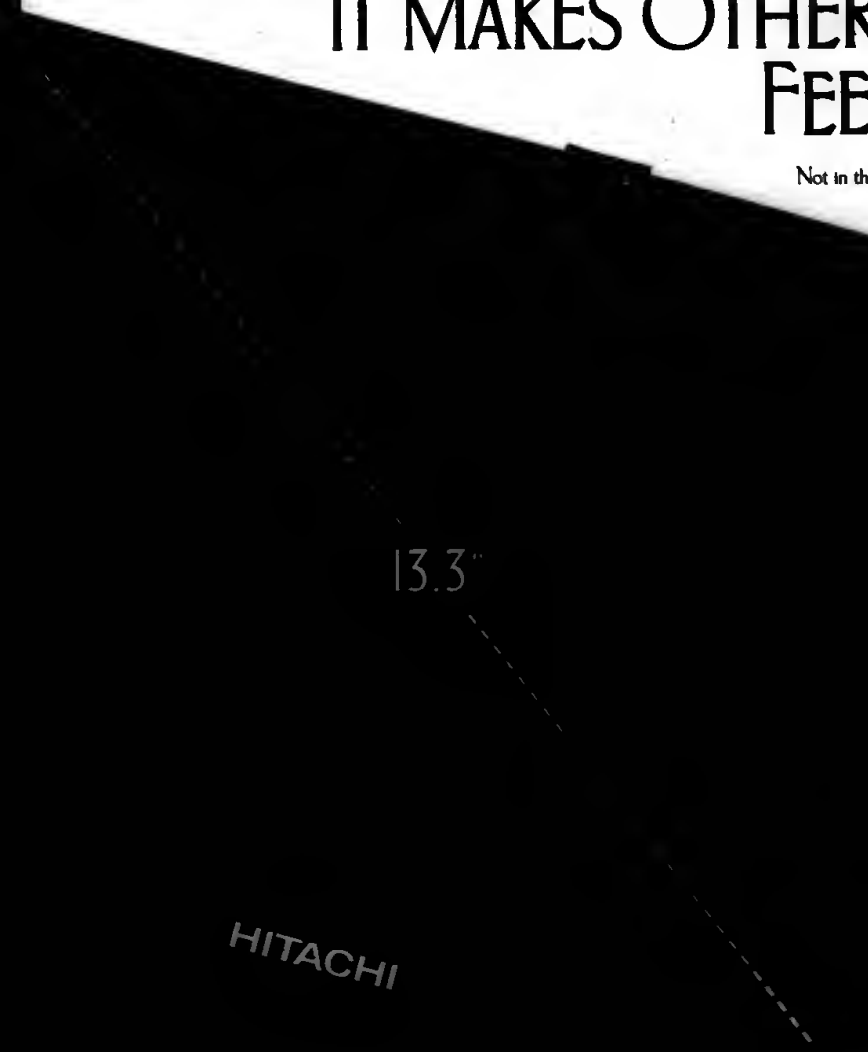

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CW 0804

HOW IS managers USE THE WEB

Browsing? Who has the time? IS managers are using the Web to find specific answers, create presentations and monitor the competition and the latest news

Some IS managers say they're more apt to go to the Web for amusement or general news than for the latest papers that are germane to their jobs

By Leslie Goff

IN HIS LAST-MINUTE preparations for a recent business trip to Chicago, Tom Lamb went online and downloaded to his laptop articles from his favorite newspapers and magazines. After the pilot signaled that it was OK to use personal electronic devices, Lamb spent his flight quietly reading.

What would have made most people late to the airport actually saved time and trouble for Lamb, senior director of information systems at Adelphia Communications Corp., a national cable systems operator in Coudersport, Pa.

The World Wide Web has eliminated television and print as his primary sources for daily news, Lamb says. He surfs his favorite Web sites — including *USA Today* and several vendor home pages — several times a day, every day. He uses a cable modem that can receive data at speeds up to 10M bit/sec., much faster than a dial-up modem.

"You need speed," Lamb says. "And a dial-up modem just doesn't cut it for a busy person. Content is useless without speed, because people don't want to wait around."

Lamb and other top IS guns say the Web is useful for gathering vendor news and product details, but Lamb says he also enjoys the advantage of having high-speed access to the Internet. Some of his peers in other industries say performance and content issues discourage them from using the Web on a regular basis.

Robert Spicer, executive vice president and chief information officer at Chevy Chase Bank in Chevy Chase, Md., is more typical. Because the bank doesn't have a firewall in place, Internet access is available only from a shared, dedicated PC, via a 28.8K bit/sec. modem. Spicer goes online only a few times per month "for a quick answer to a very specific question," he says.

"I've really got to need the information if I go online during business hours, because it is so slow," Spicer says. "At home, it's different because I use PointCast and the other 'push' products, so I don't have to spend as much time online."

But IS managers don't rank repositories of IS management papers, professional IS association home pages, IS career sites and online computer publications high on their list of bookmarks.

Several IS managers say they use the Web more for amusement or to help spouses, children or friends than for business.

"I stay away from a lot of IS sites because they usually rehash stuff I've already read, and I can read [printed materials] a lot faster than the Web can present pages to me," says Tom Loane, CIO at Alamo Rent A Car, Inc. in Fort Lauderdale, Fla.

He says he uses the Web several times a week to find product information and to view competitors' sites. For example, when Avis, Inc. recently launched an online booking system, Loane logged on to assess a feature-by-feature comparison with Alamo's Web-based application.

NECESSARY EVIL

Despite their gripes, IS managers who use the Web regularly also say they couldn't get along without it. No matter how often and for how long they log on, the Web gradually is becoming a tool they use to meet the high-pressure demands of their jobs.

The Web has emerged as a particularly good source for putting together convincing presentations, IS managers at all levels say. For example, Barry Gallant, a project leader in the Engineered Materials sector at AlliedSignal, Inc. in Morristown, N.J., persuaded a user department to evaluate several different groupware platforms.

When Spicer's boss asked him to bring information about a potential business partner into a meeting that was starting in an hour, Spicer used the Web to put together 12 documents — copied and bound — with all the information the CEO wanted.

Dwight Muller, director of information services at Fallon Healthcare System, a health maintenance organization in West Boylston, Mass., says he collected a series of Web pages he found through the links at the College of Healthcare Information Management Executives home page (*chime-net.org*) to demonstrate for Fallon's end users how Web-based education, patient scheduling and other health care applications could meet critical hospital needs.

"Your orientation, your mindset, changes when you start using the Web because you know information is always available," says Sue Chichin, manager of the Infrastructure and Information Technology department at Chubb & Son, Inc. in Warren, N.J. She says she surfs extensively to find sites that support her role within Chubb's Diversity Task Force. The group is aimed at bringing more women and ethnic minorities into the company's workforce. Chichin uses the Web as a resource for technical questions and answers.

"Whenever anyone mentions something they need, I know I can get the information online," she says. "The issue is, will it be the right information?" □

Goff is a freelance writer in New York.

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AFTER.

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BEWARE OF 'BAIT, SWITCH AND SUFFER'

LEILANI ALLEN

IT'S OPEN SEASON on information systems staff. With certain skills in extremely short supply, poaching employees has become the norm. So, what's an IS manager to do?

Here's my suggestion: Educate yourself and your employees about the tactics firms use to lure staff elsewhere. IS professionals are growth-oriented. They're looking for a chance to enhance their skills and their knowledge of new technologies. But many of the new jobs aren't as advertised.

Sometimes, your prized project manager is really being sold a bill of goods. Here are some real-life examples you can share with your staff, so they don't assume the grass is always greener.

Cynthia was an experienced programmer/analyst. She liked the technical parts of the job, but really thrived on figuring out solutions to business problems. She had recently started taking business courses at a local college. A vendor who worked with Cynthia invited her to interview for a sales support position.

At the interview, Cynthia was told that business problem-solving was the key skill for the sales job. She also was told that the firm fully reimbursed tuition and actively encouraged employees to improve their skills. Cynthia was enthralled and took the job.

In practice, Cynthia found that the vendor pretty much had a "one-size-fits-all" technology solution. Rather than discover a customer's true needs, Cynthia was asked to just sell the customer on the company's products. And the firm sold heavily in the manufacturing area, in which Cynthia had absolutely no background. Any solutions she could offer were likely to be naive and shortsighted.

As for the tuition, Cynthia found that her travel schedule prohibited her from regular attendance at a course. She became disenchanted.

Hector was a network designer at a small IS shop. He had just completed a major project, redesigning the network to support a client/server environment. He took classes and was focused on being on the "cutting edge." He also liked the recognition he received, which gave him access to senior IS management.

But Hector worried that his skills were being wasted at such a small company. Having come from a Fortune 200 firm, he worried that he would soon run out of opportunities to be innovative. He also wanted to make more money. So when a friend's recruiter called, he responded.

The recruiter agreed with Hector that a small firm probably couldn't offer him many opportunities. Only large companies could afford to buy the "latest and greatest" technical tools. Besides, he would have the chance to work with other experts. Hector didn't have to think twice.

But after a few months, Hector realized he had become a small fish in a very large pond. Previously, he was responsible for the whole network. Here, his team supported only a segment of it and one or two applications.

The company had recently invested in network monitoring software, and Hector was selected to learn the product in depth. But as the sole product guru, Hector was deemed "too valuable" to assign to other projects.

Buried in a much larger organization, Hector's light got little chance to shine. He quit within the year.

Pat was an IS manager with 10 years of experience in systems operations and development. A consulting firm contacted her about an offer it termed "too good to be believed."

The firm was looking for someone to manage a major technology implementation. She would have full project control, supervise a much larger staff (in-house as well as contractors) and interact with top-level executives in both firms. Although the salary was comparable to what she was making, the project bonus was defined as 50% of base.

Pat became disillusioned. The team members weren't in place and the client was reluctant to allocate them. Pat had to spend her first few weeks recruiting her own staff. She found out the project was considered a loser by the company; she was the third manager to have a go at it. Requirements were ill-defined, the lawyers were battling over the contract and the vendor supplying the technology wouldn't agree to delivery dates.

Within three months, the consulting firm reorganized, a new manager was brought in and Pat's role became that of chief analyst. A year later, the project was still struggling and no bonus was in sight.

KEEPING 'EM HAPPY

Of course, bad-mouthing your competition isn't enough to keep your best employees. People stay at a job when they are given the chance to do some interesting and challenging work and when the company recognizes, appreciates and fairly rewards their efforts. All that sounds easy, but it isn't. A lot of IS work is tedious and repetitious, and our tendency is to have someone master one task and do it forever.

Instead, we have to ensure that staff members have enough variety in their work and the opportunity to learn new things. We need a reward system that combines monetary and nonmonetary rewards (for example, days off, telecommuting options or education opportunities) and public and private pats on the back. Managers should constantly ask: "What motivates my employees to stay? What would prompt them to leave?"

We have to demonstrate, every day, that we have the employees' best interest at heart and that we will help them meet *their* objectives, not just the company's objectives.

Finally, don't be afraid to discuss with your employees that every job has its ups and downs — including their jobs. The goal is to get them to examine all job factors, not just the one or two that are appealing, when opportunity knocks. The old adage still holds: If it sounds too good to be true, it probably is. □

Allen's column deals with the kinds of people issues managers face every day but are reluctant to discuss openly. Each is based on a real-life situation. The names and certain circumstances have been changed to protect confidentiality. Allen is a director at Tenex, a management consulting firm in Burlington, Mass.

COMPUTERWORLD

WANTED: SMART MANAGERS

What management technique do you use that you consider particularly effective? Send a brief synopsis, and we'll work with you to develop a case study for publication. Topics include: interviewing candidates, hiring and firing, counseling, handling conflict, planning, budgeting, controls and reporting — the whole gamut of management issues. E-mail Leilani Allen at lallen@tenex.com (no vendors or consultants, please).

IT'S OPEN SEASON on information systems staff. With certain skills in extremely short supply, poaching employees has become the norm. So, what's an IS manager to do?

Here's my suggestion: Educate yourself and your employees about the tactics firms use to lure staff elsewhere. IS professionals are growth-oriented. They're looking for a chance to enhance their skills and their knowledge of new technologies. But many of the new jobs aren't as advertised.

BEWARE OF 'BAIT, SWITCH AND SUFFER'

LEILANI ALLEN

Sometimes, your prized project manager is really being sold a bill of goods. Here are some real-life examples you can share with your staff, so they don't assume the grass is always greener.

1

Cynthia was an experienced programmer/analyst. She liked the technical aspects of the job, but really thrived on finding out solutions to business problems. She had recently started taking business courses at a local college. A vendor who worked with Cynthia invited her to interview for a sales support position.

At the interview, Cynthia was told that business problem-solving was the key skill for the sales job. She also was told that the firm fully reimbursed tuition and actively encouraged employees to improve their skills. Cynthia was enthralled and took the job.

In practice, Cynthia found that the vendor pretty much had a "one-size-fits-all" technology solution. Rather than discover a customer's true needs, Cynthia was asked to just sell the customer on the company's products. And the firm sold heavily in the manufacturing area, in which Cynthia had absolutely no background. Any solutions she could offer were likely to be naive and shortsighted.

As for the tuition, Cynthia found that her travel schedule prohibited her from regular attendance at a course. She became disenchanted.

2

Hector was a network designer at a large firm. He had just completed a major project redesigning the network to support a client/server environment. He took classes and was focused on being on the "cutting edge." He liked the recognition he received, which gave him access to senior IS management.

But Hector worried that his skills were being wasted at such a small company. Having come from a Fortune 200 firm, he worried that he would soon run out of opportunities to be innovative. He also wanted to make more money. So when a friend's recruiter called, he responded.

The recruiter agreed with Hector that a small firm probably couldn't offer him many opportunities. Only large companies could afford to buy the "latest and greatest" technical tools. Besides, he would have the chance to work with other experts. Hector didn't have to think twice.

But after a few months, Hector realized he had become a small fish in a very large pond. Previously, he was responsible for the whole network. Here, his team supported only a segment of it and one or two applications.

The company had recently invested in network monitoring software, and Hector was selected to learn the product in depth. But as the sole product guru, Hector was deemed "too valuable" to assign to other projects.

Buried in a much larger organization, Hector's light got little chance to shine. He quit within the year.

3

Pat was a MIS manager with 10 years of experience in financial systems operations and development when a consulting firm contacted her about an offer it termed "too good to be believed."

The firm was looking for someone to lead a major technology implementation. She would have full project control, supervise a much larger staff (in-house as well as contractors) and interact with top-level executives in both firms. Although the salary was comparable to what she was making, the project bonus was defined as 50% of base.

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Buyer's Guide

Beyond browsing, Netscape Communicator 4.0 unites the enterprise

BY HOWARD MILLMAN/SUMMARY: A comprehensive suite of integrated Web applications suitable for use in stand-alone, remote and networked environments. Advanced users can customize Communicator's appearance and behavior, and novices can use it right out of the box. The Professional version adds enterprise-level tools that enable centralized browser management and automated distribution of upgrades.

REVIEW▶
Netscape Communicator 4.0

OVERALL GRADE A-

NETSCAPE COMMUNICATIONS CORP.
Mountain View, Calif.
(800) 638-7483
(206) 882-8080
www.netscape.com

PRICING: $59, Standard; $79, Professional. Contact Netscape for volume pricing.

PLATFORMS: Runs on 16 platforms

GET READY,

Navigator browser buffs, Netscape Communications Corp.'s recently released and aptly named Communicator 4.0 improves communication between machines as well as between people. Netscape will tempt you with an abundance of new groupware, collaboration, Internet access, site design and central administration features. And users of previous Netscape browsers can step in to the new version without returning to college. Version 4.01, which includes a fix for the so-called Danish privacy bug, is now available at Netscape's World Wide Web site.

Although Communicator 4.0 is a powerhouse, it also has flaws. For example, configuring its wealth of features could be more intuitive.

Improvements over Netscape Navigator 3.0 include support for interactive page content via dynamic Hypertext Markup Language (HTML) and HTML positioning and layering, which lets developers specify the x, y and z coordinates of each page's elements. Communicator's more visually pleasing interface provides a cleaner, larger content area. Customizable tool bars materialize with a click of the right mouse button, which replaces the more traditional pull-down menus. If you hold the mouse pointer over the back or forward button, you summon a tool tip that lets you choose a page to jump to. You no longer have to go back one page at a time. A new go-to feature lets you jump back or forward to any page you have visited in the current session.

PERSONAL PROFILE

The "profiles" feature takes some of the headache out of dealing with systems shared by multiple users. Each user gets a personal profile that remembers their bookmarks, newsgroups, electronic-mail address books and messages.

Communicator's three core components include Navigator 4.0, a much-improved version of Netscape's popular browser; Messenger, a successor to Netscape Mail and a much-improved E-mail client; and Collabra, Netscape's technology for real-time participation in internal company discussion groups and Usenet newsgroups.

The suite introduces other Internet applications, including Composer, which creates and publishes Web pages; and Netcaster, a "push" technology that transports selected information to the desktop. Another of Netscape's time-savers, SmartUpdate, helps speed the installation of browser plug-ins.

Of the two components in Netscape Conference, the shared whiteboard saves more time than Internet telephony wastes. Conference does an excellent job of setting up Internet audio conferences, but the application is still hampered by the Internet's marginal audio quality and the extra nuisance involved in Internet-based audio. But it can eliminate long-distance telephone charges.

Communicator's Professional edition includes Netscape Calendar, which schedules meetings and tracks group events, and IBM's Host On-Demand, which enables 3270 emulation and mainframe connectivity. Netscape's Auto-Admin will let network administrators centrally manage and update networked PCs. Every time a user launches Communicator, it queries a central configuration file. If the values have changed, the user is asked if he wants to update his machine's configuration. Lightweight Direc-

Beyond browsing, page 72

Beyond browsing

CONTINUED FROM PAGE 71

tory Access Protocol (LDAP) support lets users query multiple network, extranet and X.500 LDAP-compliant directories.

Messenger's improvements make it s worthy competitor to Microsoft Corp.'s Exchange and Lotus Development Corp.'s Notes. It provides context-sensitive menus and tool bars, which allow for easier sorting, filing and threading of messages, and instantaneous full-screen viewing. Support for Post Office Protocol 3, Internet Message Access Protocol 4 and Simple Mail Transfer Protocol assure compatibility with all major mail systems. Support for Secure/Multipurpose Internet Mail Extensions encryption provides peace of mind for organizations that want to take advantage of the Internet's global reach and low cost to exchange information.

Small but welcome features include s spell checker and user-defined rights that determine how much access a Java applet can have to the client computer's resources. Support for HTML messaging enables you to send an HTML- or text-formatted message to s recipient. That can help reduce the number of messages that take longer to open than to read.

Messenger also provides tools for advanced mail management, including access to multiple mailboxes and the sbility to create multilevel filtering rules. Unfortunately, Messenger can't filter by message or sttachment file size.

Netscape's newsgroup application, Collabra, is well integrated with Messenger. Collabra supports store and forward discussions over s network, intranet and Usenet groups.

Composer, an HTML authoring tool, also improves on the editor previously available in Navigator Gold. Like many of the HTML authoring tools now available, Composer insulates you from dealing directly with HTML tags. I prefer to write my own HTML code, but then I change the oil on my cars, too.

Composer turns in a credible performance at preparing and publishing pages. The appearance and eye appeal of the page depends more on the skill set of the designer than that of the program.

Netcaster, available free from Netscape's Web site, delivers selected pages from predesignated internal or external Web sites.

Despite the wide variety of useful features, a buy or upgrade decision involves more than assessing the capability of the browser technologies offered by Netscape and Microsoft.

At least for now, Netscape has seized the flag by moving beyond browsing to provide a full suite of competent tools to enable broad-based improvements in the way people and machines communicate. It provides an excellent solution for advanced users and administrators. Communicator's redesigned interface and fluid interapplication integration makes it an excellent choice to use in the enterprise and capable of challenging the feature set promised by Microsoft in its upcoming Internet Explorer 4.0. □

Millman operates Data Systems Services Group, an independent networking consultancy. He can be reached at hmillman@mcimail.com.

Questions to consider when choosing a browser and the likely choice to go with,

according to Tim Sloane, director of Internet infrastructure research at Aberdeen Group in Boston

Is free important?	MICROSOFT
Do you need s full suite of Internet applications?	NETSCAPE
Are you planning to deploy applications using CORBA/Internet InterOrb Protocol?	NETSCAPE
Are you planning to deploy applications using Component Object Model/ActiveX?	MICROSOFT
Are you concerned employees might execute applications that could corrupt the PC?	NETSCAPE
Will you deploy Netscape- or Microsoft-specific services for directory mail, groupware or security?	DEPENDS ON ANSWER
Is push technology a key technology you will deploy internally?	NETSCAPE
Has your organization standardized on Microsoft on the desktop?	MICROSOFT
Are you running NT with ActiveX?	MICROSOFT
Are you running a multiplatform environment or NT with CORBA?	NETSCAPE
Are there important sites that users access that are written specifically for one of the browsers?	DEPENDS ON ANSWER

PEDDLE PUSH

BY ROSS GREENBERG

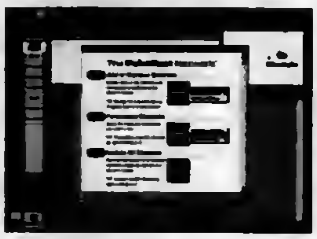
With the "push" playing field changing practically daily, here's an update on four more products to consider, including the recently released PointCast 2.0. Other push technology reviews appear in *Computerworld*'s May 26, 1997 and June 23, 1997 issues. In this occasional series, I have reviewed Marimba, Inc.'s Castanet; BackWeb Technologies, Inc.'s BackWeb; Wayfarer Communications, Inc.'s Incisa; and Lanacom, Inc.'s Headliner Professional. This week's products show progress but are still flawed.

- PointCast, Inc.'s PointCast Network Version 2.0 is faster and less greedy with bandwidth than previous releases. The Connections software makes it more useful for corporate purposes because you can set up your own intranet or Internet channel. But it still relies on scheduled polling to update desktop information.
- DataChannel Corp.'s ChannelManager puts the information systems department back in control, pushing selected channels out to end users and customers. It takes some getting used to, though — it isn't just standard push.
- InCommon, Inc.'s Downtown will let users define their own channels pretty easily, and its look-ahead caching makes page access very swift. But the interface needs some usability tuning.
- FirstFloor Software, Inc.'s Smart Delivery provides for great document delivery and unique creation of your own channel (or push client). But using it for more traditional push purposes proved difficult because it was designed more for document delivery.

PointCast Network 2.0 (beta)
PointCast, Inc.
Sunnyvale, Calif.
www.pointcast.com
Price for client and PointCast Studio: Free

PointCast listened to its users. Being that there are about two million of them — one out of every 100 adults in the U.S. — that's s lot of listening.

With PointCast Network 2.0's release, expect fewer detractors. Version 2.0 is faster, less greedy with Internet or LAN bandwidth, and it multitasks better. Its viewer can be based on Microsoft Corp.'s Internet Explorer or Netscape Communi-



cations Corp.'s Navigator instead of proprietary. And it's easy to publish your own channel on the World Wide Web, and the client or viewer can be branded with s corporate logo. You can easily personalize the animated ad in the viewer snd the screen saver. Just use PointCast's Studio design shop, which offers easy-to-create splash screen animations.

But some things don't change: The "SmartScreen" screen saver is still anemic, and the ticker display can't be positioned arbitrarily. More important, PointCast still isn't a "true push" product, relying on scheduled polling to update desktop information. That can be an enormous drain on corporate bandwidth, even with PointCast's great enhancements in caching technology. Countering this is the I-server, which allows bandwidth congestion to be on local intranets rather than through gateways. Scheduled polling, limited to every five minutes or so, makes real-time updating impossible.

The I-server Administrator update, due by summer's end, permits IS administrators to limit the channels users can subscribe to and block some ad displays.

But the most dramatic part of 2.0's update is its Connections software, which allows anyone to become a PointCast publisher. Stick a wizard-generated .CDF file on your server, and you're a publisher. Publicize your new channel in a variety of ways, including on *www.excite.com/pointcast*, and timely access to millions is but a single mouse click away.

The update is impressive in its scope, and the price is right: free.

ChannelManager
DataChannel Corp.
Bellevue, Wash.
www.datachannel.com
Price for ChannelManager: 100-seat license, $79 per seat; 1,000-seat license, $20 per seat

In your department, there's one person everybody goes to when they need a good Web site. She knows all the search engines and all the oddball places hidden on the Web pertaining to your quest. Her bookmark file is bigger than the Manhattan yellow pages, and she has it all memorized. When she takes a day off, productivity grinds to a halt.

DataChannel has put those talents into ChannelManager. A ChannelManager administrator enrolls members in the system and in groups, such as Technical or Finance. Related and appropriate Web sites are grouped into channels, subgrouped into tabs and itemized within the tabs. Each channel and its constituent parts are scheduled for monitoring and published (or made available) to interested groups whose members can either subscribe as they wish or be automatically subscribed. New channels, tabs and items are pushed to interested subscribers using Tibco, Inc. multicasting technology.

There isn't a proprietary client to download. Using any Java-enabled browser, the ChannelManager applet is automatically downloaded from the local server once for each machine.

Legacy machine users be warned: The befty Java applet requires at least a 100-MHz Pentium processor and at least 16M bytes of RAM.

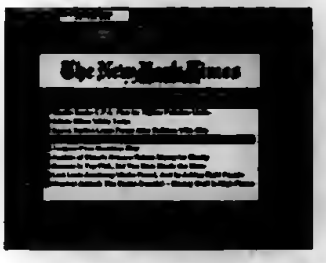
ChannelManager permits different people and different groups to have selected information prepared and presented to them by a centralized staff. The right information at the right time to the right people. Now your human channel manager can take a day off.

Downtown
InCommon, Inc.
San Mateo, Calif.
www.incommon.com
Price for Downtown server: $10,000 (client is free)

Downtown has two parts: The client software provides vertical or horizontal taskbar-like item displays containing potentially animated icons for each channel subscribed to; the server software lets corporate users provide active content for their own channels, including a pop-up table of changed content. It's very easy to add additional channels.

Although Downtown will be Tibco-enabled in the next release, providing for true push, the version reviewed was a standard scheduled polled product with each client checking through the Hypertext Transfer Protocol (HTTP) for content changes across the Web or to the server.

Changes are announced via an alert on the channel bar, and a click on an icon brings up a browser Web page or a "premium channel" publisher's active pop-up splash screen. All pop-ups are based on parsing of standard Hypertext Markup Language from Web pages. Access to



the Web is through an unobtrusive local proxy web server that Downtown automatically installs. This allows smart look-ahead or prefetch of candidates for very fast future browsing from the adjustable Quickcache, even if offline.

Accessing password-enabled sites is simple with Downtown's easy-to-configure Authentication Library, a scheme in which log-ins are automatically made while the client or server does content change checks.

Downtown uses bandwidth only when the Internet connection is quiescent. And it boosts user-initiated requests, such as browser clicks, to the top of the download queue of the proxy server. That gives surprisingly little performance degradation.

Downtown is a surprisingly deceptive product — there's a lot more good design under its hood than is apparent with a glance.

Smart Delivery
FirstFloor Software, Inc.
Mountain View, Calif.
www.firstfloor.com
Prices: Smart Delivery Client, $150; Smart Delivery Server, $9,995; Software development kit, $25,000

Getting the right mix between corporate intranet needs and end-user satisfaction is difficult in the push market. Some things, such as updated price lists, are a no-brainer: Every time a price list changes, everyone concerned should immediately get an updated copy. But the low inventory report may be of importance only to the vice president of manufacturing.

FirstFloor's product allows document delivery (in which Web pages are merely a special case) through a centralized administrator, with enough room left over for end-user personalization. It consists of three pieces: the Publisher, Server and Subscriber.

The IS administrator creates a bookmark containing an agent he defines to indicate whether a uniform resource locator's data, its indirect HTTP links or both should be monitored — and if so, how often. He maintains the collection of those bookmarks in a catalog and publishes them on the server.

The server also prefetches and caches Web-based information, notifying and delivering those documents according to rule sets that define end users and the group to which they are allowed to belong. Defining composite groups isn't difficult.

All published information on the server is automatically scanned to produce keyword lists, summaries and indexes. Chances are that if it was important enough to publish, it's important enough to have indexed and searchable.

Finally, the separately available FirstFloor Application Developer's Kit allows your developers to entirely modify the behavior of the FirstFloor client, making the client entirely data driven. Your programmers can cause things such as bulletin alerts (either visibly or audibly cued) when, for example, a competitor drops or raises its prices.

FirstFloor is another push vendor heading to true push though the Tibco engine. That should make its Smart Delivery product work even more intelligently. To make the most use out of it will take some time, some training and some of your own intelligence. □

Greenberg is a reviewer and developer in New Kingston, N.Y. He can be reached at greenber@ramnet.com.

CONFERENCE

For previous reviews on browsers and push technology products, go to our Web site at www.computerworld.com/pubs/archive.html. Reviews include the following products:
– Communicator beta
– Microsoft Internet Explorer 4.0 beta
– Castanet, BackWeb
– Wayfarer's Index, Lotusscope's Headliner

ake Roo

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In Depth

Author Michael Schrenk

A respectable IS consultant ventures into the desert for some DEF CON depra[illegible]Toto, I d[illegible]re in M[illegible]olis any

FEAR & HACKING in Las Vegas

By Michael Schrenk

How do you distinguish DEF CON from Comdex or Share or any other information technology gathering? DEF CON is the one to which attendees are merrily encouraged to bring firearms.

About a dozen did just that. One day they went deep into the desert to shoot large-caliber rounds at full cans of Mountain Dew and a paper likeness of Bill Gates. Nobody thought to bring clay pigeons, so for skeet shooting, they made do with America Online CDs.

I'm an Internet consultant from Minneapolis. I like to think I'm an upstanding member of the mainstream information systems community. So I was nervous about attending DEF CON V, held last month at the Aladdin Hotel and Casino in Las Vegas [CW, July 21].

But I was also drawn by the opportunity to learn network security techniques from the very hackers who break in to computer systems. DEF CON's organizer, known as Dark Tangent, touted the fifth annual event as (among other things) the conference for computer hackers, password crackers, virus coders and phone phreaks.

I was uncomfortable because computer hacking and wire fraud aren't generally discussed by us polite corporate IS types, and we normally don't come in contact with those who participate in such activities. At least, that's what I thought before the conference. Now I'm convinced we have contact with hackers all the time. We just don't notice them — and that's the way they like it.

But there are times when

Fear & hacking, page 77

PHOTOS BY SUSAN WARNER

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10. Manufacturer (other than computer)
20. Finance/Insurance/Real Estate
30. Medical/Law/Education
40. Wholesale/Retail/Trade
50. Business Service (except DP)
60. Government - State/Federal/Local
65. Communications Systems/Public Utilities/Transportation
70. Mining/Construction/Petroleum/ Refining/Agriculture
80. Manufacturer of Computers, Computer-Related Systems or Peripherals
85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
90. Computer/Peripheral Dealer/Dist./ Retailer
95. Other_____ (Please Specify)

2. TITLE/FUNCTION (Circle one)
IS/MIS/DP MANAGEMENT
19 Chief Information Officer/Vice President/Asst. VP IS/MIS/DP Management
21 Dir./Mgr. MIS Services, Information Center
22. Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr./PC Mgr., Tech. Planning, Administrative Services
23. Dir./Mgr. Sys. Development, System Architecture
31 Programming Management, Software Developers
41. Engineering, Scientific, R&D, Tech. Management
60. Sys. Integrators/VARs/Consulting Management

CORPORATE MANAGEMENT
11. President, Owner/Partner, General Mgr
12. Vice President, Asst. Vice President
13. Treasurer, Controller, Financial Officer

DEPARTMENTAL MANAGEMENT
51 Sales & Mktg. Management
70. Medical, Legal, Accounting Mgt.

OTHER PROFESSIONAL MANAGEMENT
80. Information Centers/Libraries, Educators, Journalists, Students
90. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply.)
Operating Systems
(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ☐ Yes ☐ No
Networking Products ☐ Yes ☐ No
Internet Products ☐ Yes ☐ No

4. Which of the following products do you buy, specify, recommend or approve the purchase of? (Check all that apply.)
(a) ☐ Internet software
(b) ☐ Internet browsers
(c) ☐ Web authoring/development tools

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40. Wholesale/Retail/Trade
50. Business Service (except DP)
60. Government - State/Federal/Local
65. Communications Systems/Public Utilities/Transportation
70. Mining/Construction/Petroleum/ Refining/Agriculture
80. Manufacturer of Computers, Computer-Related Systems or Peripherals
85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
90. Computer/Peripheral Dealer/Dist./ Retailer
95. Other_____ (Please Specify)

2. TITLE/FUNCTION (Circle one)
IS/MIS/DP MANAGEMENT
19 Chief Information Officer/Vice President/Asst. VP IS/MIS/DP Management
21 Dir./Mgr. MIS Services, Information Center
22. Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr./PC Mgr., Tech. Planning, Administrative Services
23. Dir./Mgr. Sys. Development, System Architecture
31. Programming Management, Software Developers
41. Engineering, Scientific, R&D, Tech. Management
60. Sys. Integrators/VARs/Consulting Management

CORPORATE MANAGEMENT
11. President, Owner/Partner, General Mgr
12. Vice President, Asst. Vice President
13. Treasurer, Controller, Financial Officer

DEPARTMENTAL MANAGEMENT
51 Sales & Mktg. Management
70. Medical, Legal, Accounting Mgt.

OTHER PROFESSIONAL MANAGEMENT
80. Information Centers/Libraries, Educators, Journalists, Students
90. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply.)
Operating Systems
(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ☐ Yes ☐ No
Networking Products ☐ Yes ☐ No
Internet Products ☐ Yes ☐ No

4. Which of the following products do you buy, specify, recommend or approve the purchase of? (Check all that apply.)
(a) ☐ Internet software
(b) ☐ Internet browsers
(c) ☐ Web authoring/development tools

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Fear & Hacking

CONTINUED FROM PAGE 75

hackers go out of their way to get noticed. One day during DEF CON, a group traveled three hours north of Las Vegas to a government facility known as Area 51. This is the place — very much in the news lately — where it's long been rumored that the government is conducting research with technology recovered from a crashed alien spacecraft.

When the hackers reached the security fence surrounding the compound, they lofted aluminum foil attached to helium balloons and watched the devices float within the scan of Area 51's radar. Minutes later they were asked to kindly leave the premises.

And the duck sang 'Blue Suede Shoes'

You expect vendors at any computer conference. At DEF CON V, entrepreneurs peddled logo parody T-shirts, books on hacker culture and piles of used telephone and computer hardware.

Even here, though, there was a hack. I felt sorry for the T-shirt salesman who lost much of his inventory when the sign that originally said "$20 each" was replaced by one that read "Free, take one."

And there was a vendor-sponsored scavenger hunt. Items on the list included the following:

- A security camera (60 points)
- A foreign Web page "redecorated" by the hunter (15 points)
- A live duck (20 points)

The hacker with the most points got to grab items from a box filled with used computer and telephone components.

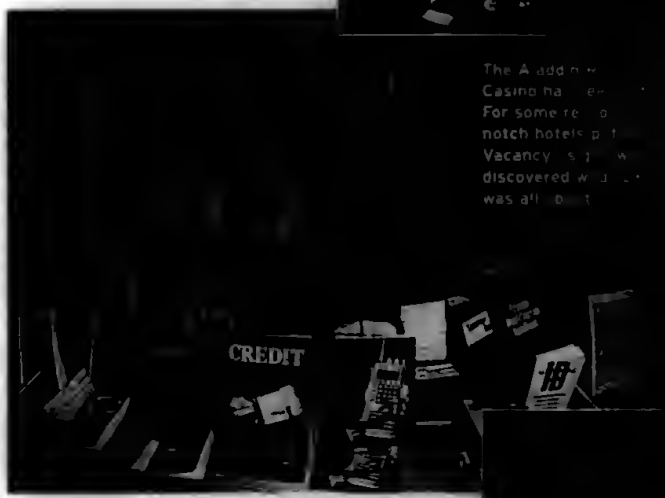
And yes, somebody found a duck.

Did you say root beer jugs?

One guy showed up with a handmade rail gun. A rail gun moves a lot of electrical energy down a conductive track. Along the way, it can fire a projectile at speeds approaching 10,000 meters per second. It discharges so much power, the designer used graphite disks as projectiles. Anything metal, you see, would have been welded to the gun.

The graphite projectiles were expensive, but the gun was otherwise built from hardware store items and scrap. The major design problem — the need for a large amount of power — was solved with banks of "Tesla-style" high-voltage capacitors made from root beer jugs, salt water, bolts, wire and tin foil.

"I'm doing this to prove that you don't have to be trained in something to do something. Most of the people in this room know that, but the public at large doesn't," the designer said.



That simple truth justified my attendance at DEF CON. I won't be able to convince myself any longer that I lack the training to make a system secure. There should be ways to a secure system, even if the path requires an untraditional route.

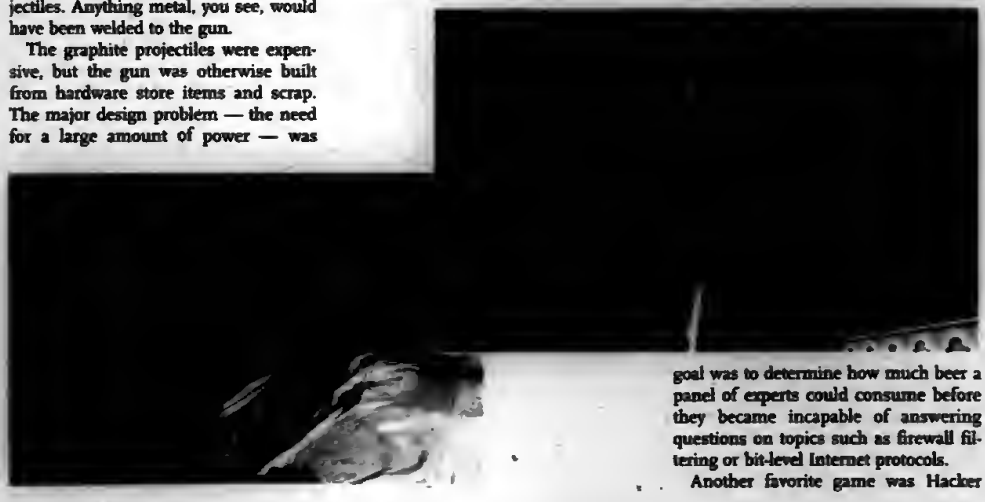
Holy Cow, a Las Vegas microbrewery, originally agreed to give a free beer to anybody with a DEF CON badge. The offer was published on DEF CON's Web page (*www.defcon.org*), and coupons were printed.

But shortly before the convention, Holy Cow changed management. The new boss refused to honor the free beer commitment.

When the bad news was announced, conference attendees jeered. But the mood changed to anticipation, then wild laughter as the announcer said, "So I visited their Web page ..." At this point the crowd started chanting, "What's their URL? What's their URL?"

The lack of free beer didn't stem the flow of alcohol. Drinking games thrived.

In one — "the TCP/IP game" — the goal was to determine how much beer a panel of experts could consume before they became incapable of answering questions on topics such as firewall filtering or bit-level Internet protocols.



Another favorite game was Hacker Jeopardy. Categories included We Still Hate Cyber Movies, Some (Inter)net Security and Aliens Among Us.

And then there was the "Spot the Fed" contest. It's a fact of DEF CON life that federal law enforcement agents attend the conference. Squares like me, the feds hope to learn the latest tricks of the trade. But unlike me, they keep a close eye on who's who at DEF CON — groups, trends and leaders are all monitored.

I was amazed as three consecutive federal agents were spotted and marched sheepishly (but good-naturedly) to the podium. In each case, the agent was correctly identified solely through the social engineering skills of a hacker. Winners received T-shirts and a round of applause.

I can't recall ever seeing an industry show with as much audience participation as DEF CON. A simple question such as, "How many of you hackers program with the keyboard in your lap?" filled the conference room with cheers and whistles. Pleased by the results of his informal demographic study, Doug Hacker (yes, that's his real name) proceeded to toss handfuls of his invention, the Lap Clip, to the audience.

Throwing was the method of choice for distributing prizes — and there were countless prizes. People would stand on their chairs and dive for copies of books, such as *E-mail Addresses of the Rich and Famous* or obsolete computer boards. It wasn't uncommon to see CD-ROMs or unprogrammed cellular phones bounce 50 or 100 feet into the audience.

The main door prize was — what else? — a door. It came from a GTE Corp. service truck. It was not thrown into the audience. □

Schrenk (pictured at immediate left) is a Minneapolis-based Web application consultant at Analysts International Corp. He can be reached at schrenk@aol.com.

IT Careers

Hacker ATTACKERS

Want the REALLY best IS pros to safeguard your systems? Hire the guys who break in to them. Then again, maybe not.

By William Spain

DAVID PRINCE

IF IT TAKES A THIEF to catch a thief, then it follows that the best way to secure a system is to enlist people who have proved expert at breaking in to it. Because no one knows better than hackers where the weaknesses lie, it should make sense to hire a few of them — assuming they have mended their ways — to help keep the rest honest.

Then again, maybe not. If an individual has shown a predilection for crime, can he ever be trusted again?

Russ Hailey, president of Lawrence, Kan.-based Secure Network Systems, is appalled by the very idea. "I would not hire an ex-thief to protect a warehouse, and I won't employ any ex-hackers, period," he says. "Our pledge to our customers is that anyone who is caught hacking will quickly be an ex-employee."

Hailey's reasoning: "We have taken the position that our future rests in the trust our clients place in us. Whenever we do an installation, they have to uncover their barest network secrets."

Also, Hailey says that although "it is really not that difficult to protect a network, it takes a lot of discipline to do it. Hackers don't tend to be very disciplined people. That's why they hack."

But Hailey adds that to be effective, he and his staff "have to have a lot of insight into hacker culture. We try to do that by reading their newsgroups and staying up to speed on what they are bragging about. We also hack on our own system."

His views are shared by many in the information systems security community — at least on the record. Although some will admit to hiring, or at least consulting with, ex-hackers, many had no comment at all on the question. Among them are the National Computer Crime Information Center, part of the Federal Bureau of Investigation, and the operator of the system that is hacking's Holy Grail: the National Security Agency (NSA).

A spokeswoman for the FBI declined repeated requests for an interview, and the NSA didn't respond to faxes and telephone calls. But a highly regarded IS security consultant confirmed that both institutions, along with several major defense contractors, have occasionally used hackers — at least as informants — in the past.

"You have to find the vulnerabilities before you can patch them. It is definitely a mind-set, a very persistent type of attitude geared toward the ultimate penetration of the target entity."
– Matthew Harrigan, ex-hacker

Barring that knock on the door, how does an ex-hacker get hired to do security work? One way, of course, would be to deny any past involvement. Assuming one has never been caught, that might work, unless an employer smelled a rat.

For example, without a formal security resume that a potential employer can check up on, how does someone explain how they came by the necessary skills?

Matthew Harrigan discovered one answer: He founded his own company composed exclusively of ex-hackers. He now gets paid to do what he used to do for fun.

Harrigan says he was "sitting around one day hacking this unnamed company" when he realized that he might well be able to make a living showing it and others how he got in and how to plug the hole. The result was San Francisco-based MicroCosm, which specializes in penetration-testing, policy review and secure World Wide Web application development.

Ex-hackers, Harrigan explains, often have the best "in-depth understanding of security issues. You have to find the vulnerabilities before you can patch them. It is definitely a mind-set, a very persistent type of attitude geared toward the ultimate penetration of the target entity. I am looking for people with understanding of end-to-end en-

Breaking in to the field

Managers often balk at the idea of hiring master hackers, but they still want candidates with the skills of master hackers.

Although IS security companies may disagree about the wisdom of hiring former hackers to protect their systems, they all look for people who have the skills of a master.

Some of the technology involved can be learned easily enough. But security departments want people who can do more than just bang out code. Creativity in puzzle-solving and solid logic and analytical skills are as crucial to successful protection as they are to penetration.

And because there are so many potential ways to crack a system, security personnel often need to be generalists. Desired skills include a broad range of knowledge about network design, routing protocols, Unix, encryption and electronic commerce, and a cross-section of operating system experience. A solid Internet service provider background also is a plus.

—William Spain

cryption, buffer overflows, electronic commerce and networking protocols."

That said, Harrigan doesn't employ "anyone currently involved in hacking, and it would be very hard for me to hire someone with a criminal record. That shows some measure of recklessness or carelessness. Committing a criminal act is one thing, but I won't hire people who do it for malicious reasons. I have very strong feelings about people who destroy data needlessly."

There are two kinds of hackers, according to Harrigan: "There's the people who want to break in to the FBI because it's cool, and then there's the real, true hacker: a person who is intrigued by what they are doing — by the challenge — and that is why they do it."

Harrigan says he prefers to hire from the second group. "When we

DAVID COWLES

hire someone, we assess very carefully their attitude toward the clients. They have to understand that they are making a big change [and can't have] a 'nyah-nyah-nyah' attitude."

In compensation for putting away such childish things, however, Harrigan can promise a high degree of job satisfaction: "We have a 99.9% success rate in penetrating clients," he says.

Another ex-hacker, now employed to do security work at a Midwestern company, says he still is having a great time after going legit.

"It allows me to do everything I did as a kid, but legally, and they even pay me very well for it," he says.

Ironically, that former hacker's "first major contract was from someone I had broken in to a few years ago, and they knew I had done it. It made for a very amusing initial conversation." □

Spain is a freelance writer in Chicago.

Tools for the trade

Online resources for people who want to get into IS security work:

National Computer Security Organization
www.ncsa.com

InfoWar
www.infowar.com

Computer Security Resource Clearinghouse
csrc.nist.gov

Computer Emergency Response Team
www.cert.org

Hacked Net
www.hacked.net

EXECUTIVE TRACK

James H. Slusser was named vice president and chief information officer at TAD Resources International, Inc., a leading staffing services firm. Slusser has more than 30 years of information systems experience. He previously held technical and management positions at Emcon Ltd., Ford Motor Co., Digital Equipment Corp., Ernst & Whitney LLP, Shirley Co. and Serono Laboratories.

David N. Rasmussen was named CIO at CFX Corp. in Keene, N.H. Rasmussen was second vice president and strategic systems officer at ReliaStar Financial Corp. in Minneapolis. He also worked 18 years at Digital in New Hampshire.

David Spooner was appointed CIO at Millbrook Distribution Services in Leicester, Mass. He previously was director of corporate IS at Staples, Inc. in Framingham, Mass. He also has held IS management positions at Andersen Consulting and Marshalls, Inc.

Alea J. Gibbons, 50, was named to the newly created position of vice president and CIO at The Pillsbury Co. in Minneapolis. Gibbons recently advised GE Capital Corp. in a health care/IS development venture.

H. Scott Barrett, 36, was named to the newly created position of senior vice president for information technology at Republic Industries, Inc., a Fort Lauderdale, Fla., conglomerate of automotive retailing, solid waste and security services. Barrett previously was president of domestic retail at Viacom, Inc.'s Blockbuster Entertainment unit.

Dennis Dirks, CIO at The Depository Trust Co. in New York, was promoted to chief operating officer at the company. **Donald F. Donahue** replaced Dirks as CIO. Donahue was executive vice president of operations at the company.

David Moon was named to the newly created position of CIO at Doubletree Hotels Corp. in Phoenix.

John V. Scicutella, 48, previously executive vice president of operations and systems at Prudential Insurance Company of America in Newark, N.J., was named CEO of Prudential Individual Insurance Group. Scicutella joined Prudential in 1995. Before joining Prudential, he was an executive vice president at The Chase Manhattan Bank Corp., where he was also responsible for operations and systems.

Edwina Woodbury, 46, was named executive vice president, chief financial officer and administrative officer at Avon Products, Inc. in New York. Woodbury was promoted from senior vice president. She will be responsible for the cosmetics maker's global IT services. She replaces Edward J. Robinson, Avon's chief operating officer, who resigned in May.

Patrick L. Brown, 40, was named IS manager at WNBC in New York. Brown was manager of technology support at A&E Television Network.

James Graffeo, 31, was named director of MIS at Friedman Realty Group in New York. Graffeo was a systems specialist at Blitz Systems, Inc. in New York.

Gregory C. Smith, 39, was named managing director at AdMedia Partners, Inc., a New York-based investment bank. Smith was managing director and head of the IS group at Dean Witter Reynolds, Inc. in New York.

Thomas W. Lemke, 48, was named to the newly created position of vice president for database marketing at Kmart Corp. in Troy, Mich. Lemke will report directly to Floyd Hall, Kmart's chairman and CEO.

Mark A. Goldstein, 51, was named senior vice president and CIO at Proffitt's, Inc., a Jackson, Miss.-based department store chain. Goldman previously was director of enterprise solutions at IBM's distribution industry practice.

MicroAge, Inc. in Tempe, Ariz., a global technology services provider, appointed **Robert W. Mason** as president of the MicroAge Services Group and CIO. Mason is a 30-year IS veteran with experience at Anheuser-Busch, Inc. Johnson & Johnson and Bendix Aerospace, Inc.

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Chicago

WINDS of change

Hiring is getting desperate in the Windy City, where IS managers are offering large salaries – and large referral bonuses – for any available talent

By Steve Alexander

CHICAGO-AREA information systems managers are finding it more difficult to hire new employees than at any time in nearly three decades.

As a result, IS shops are taking longer to fill jobs and are more likely to use contractors to provide essential skills. IS managers rely more heavily on headhunters, job fairs and internal referrals. They are finding that if a good candidate turns up, it's best to put an offer on the table quickly.

Here's what three Chicago-area IS managers are experiencing:

Grab 'em quick!

Keith Grossich, *chief information officer, Blue Cross/Blue Shield Association of Illinois (an umbrella group that represents 59 independent insurance firms)*

Grossich says hiring hasn't been this tight in the 25 years he's been in IS. He's trying to fill five openings within an IS staff of 60. The staff uses IBM mainframes and Unix client/server systems.

"We're participating in job fairs, posting jobs on the Internet, using newspaper ads, using some search firms. And we've also, in the interim, hired half a dozen consultants," Grossich says.

One of the open jobs, a director of information technology planning position, has been open since January. And it will be difficult to fill, Grossich says. Most of the other jobs are for LAN/WAN senior analysts and network engineers with five to seven years of experience to work on groupware, Internet and intranet applications on a Windows NT server. But Internet and intranet skills are the most difficult to find, Grossich says. "A lot of people who are doing that are in consulting and really are not for hire," he says.

Grossich has learned that you have to move quickly to hire people. "If you get a resume in, you've got to be prepared within a day or two days maximum to get back to that person, get him or her in for an interview and decide whether to make an offer. If you don't, three or four other organizations will beat you to a good person," he says.

Relying on contractors

Don Karmazin, *senior vice president of IS, Chicago Board of Trade*

Karmazin says he hasn't seen the job market this tight in nearly 30 years.

"We're out beating the bushes, attending technical job fairs and using any resources we can to provide employees with hiring referral incentives," Karmazin says.

The Board of Trade has 150 IS employees and uses a Tandem Computers, Inc. system running a proprietary operating system, and Sun Microsystems, Inc. workstations running Unix. The firm has approximately 15 IS openings. It seeks computer systems engineers and designers, and senior programmer/analysts with two or more years of experience.

"We want people with skill in Tandem assembler language, Java and C++," Karmazin says.

"We're getting two or three hires a month, and we're continually running with a shortfall in staff," he says. "We use consultants as necessary to bridge shortfalls.

"Tandem assembler language expertise is probably the most difficult skill to find, followed by Java and database administrators. Our best hiring source is technical job fairs — not just on campuses, but in the city," Karmazin says.

PETER J. SCHULZ

Doubling referral bonuses

John Hollahan, *director of IT services, The Peoples Gas Light and Coke Co.*

The job candidate shortage has forced The Peoples Gas Light and Coke, a utility serving the Chicago metropolitan area, to adopt new hiring strategies.

Rather than rely exclusively on newspaper advertisements and college recruiting, the utility has turned to headhunters. It also is using a system of employee-referral incentives to help fill a half-dozen empty programmer/analyst positions.

The utility has 198 IS employees. It is an IBM 3090 user that is adding Unix machines and replacing dumb terminals with Windows NT workstation clients. Hollahan says the firm plans to replace its mainframe system with a three-tiered client/server system within two years.

The company has had to hire approximately 20 contractors to support its mainframe system while IS staffers work on the shift to client/server.

Under the employee-referral incentive plan, an employee receives $500 for a new employee referral after the new hire has been at the company two weeks. The employee receives another $1,000 after the new employee is there six months. Those amounts reflect a recent doubling of incentive payments. Peoples has hired approximately eight IS people through the referral-incentive program.

The utility seeks senior programmer/analysts with five to seven years of experience. Candidates should know IBM's MVS mainframe operating system, Unix and Powersoft's PowerBuilder. □

Alexander is a freelance writer in Edina, Minn.

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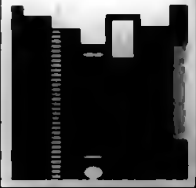

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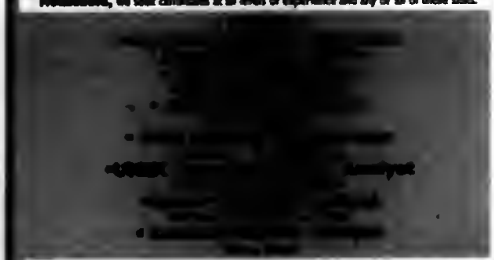

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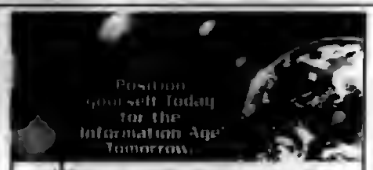

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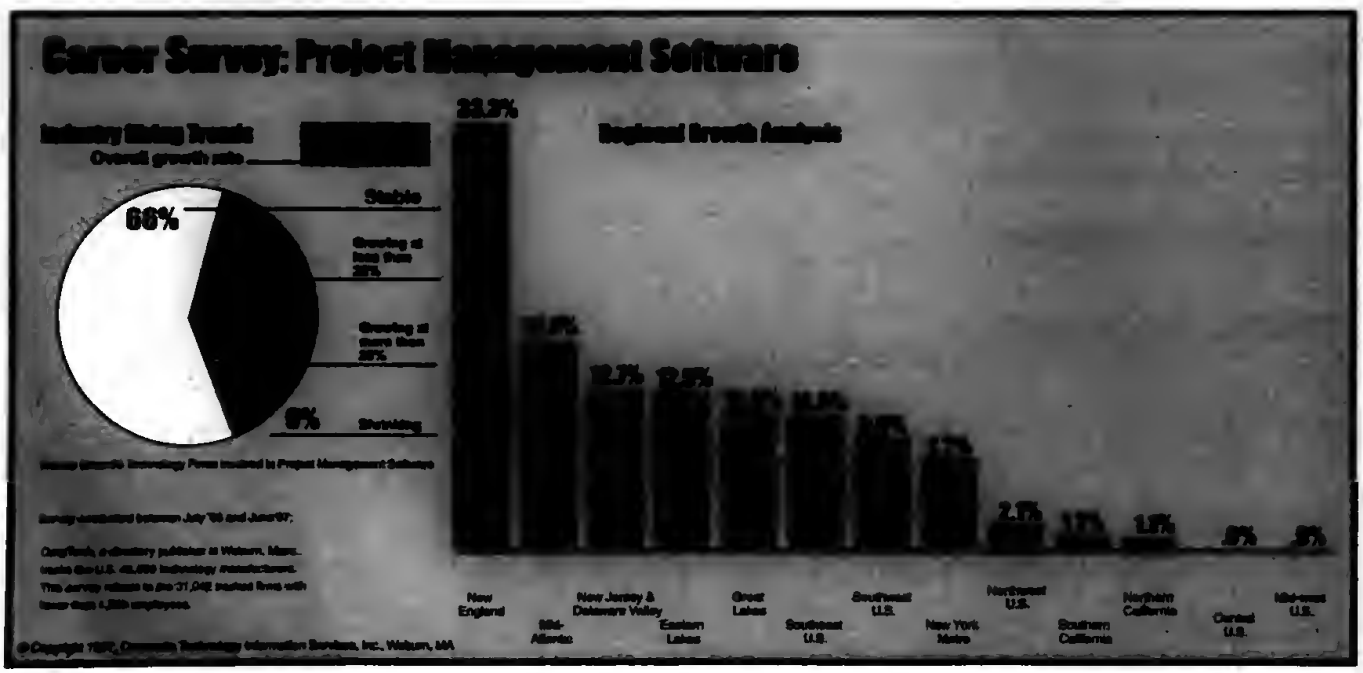

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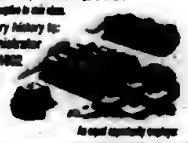

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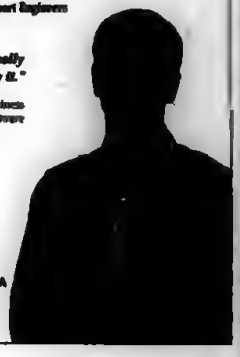

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NEW & NOTABLE

Champion Announces Breakthrough In Autoloading of CD-Rs

On May 19, at the SIGCAT trade show in Virginia, Champion Duplicators, Inc. responds to the growing demand of CD-R duplication in announcing a new tray based duplication system-the Stellar^2. Champion's industry experience is evident in the creation of this product and it is expected that the Stellar^2 will be the new standard in the duplication technology.

"We realize that the demand for something more efficient in CD-R duplication was rising, so we set out on mission to achieve four things: affordability, simple operation, reliability, and scalability." President and CEO David Wolfer said of the Stellar^2 project. "We've achieved all of these things and best of all, we did it ingeniously." Unique in concept, unprecedented in its disk loading mechanism, and unparalleled in features, the Stellar^2 utilizes a "turn-table" concept-quickly and accurately moving the discs without causing noise and vibration to the writers. The machine is reliable with few moving parts and a "clean", perfected design for long-term performance reliability.

The demand for CD-R duplication is not a new one, but as demand increases, expectations also double. Before the Stellar^2 was created, duplicating CD-Rs required expensive jukebox or time-consuming caddie-tested systems. These machines are reliable, however, there is a new standard of efficiency, innovation and affordability brought together in the Stellar^2. The Stellar^2 will be available in stand-alone or PC hosted systems.

Although pricing has not yet been released, it is estimated to be in the range of $6,000 to $7,000- an affordable price for advanced innovation. Champion is currently appointing distributors for the Stellar^2 product line. Contact Champion for full details at Champion Duplicators Inc. 2305 South Vasco Road, Livermore, CA 94550. Phone: (510) 373-6060 or (888) 723-3475. Fax: (510) 373-8160, or E-mail: customercare@www.championsms.com, or http://www.championsms.com.

TAC Systems' FAXfree software enables users to send color faxes over the Internet for little or no cost

TAC Systems, Inc. announced the addition of color capabilities to their FAXfree software. FAXfree enables Internet users to send color faxes anywhere in the world at little or no cost. Developed for Windows 95, "FAXfree on the Internet" offers the convenience of conventional fax systems without the associated long-distance phone charges. FAXfree transmits scanned color images and photographs, charts, and other traditional facsimile information to Internet e-mail addresses. FAXfree at a one time $49.95 expense, costs less than long-distance fees charged for sending just a few international faxes. A black-and-white version of FAXfree Personal is available for $29.95. A powerful server version which enables multiple users to send faxes over company networks will be released this summer. TAC Systems also offers FAXfree Portal. Available for $1,295 FAXfree Portal connects fax machines to the Internet. TAC Systems, Inc., based in Huntsville, Alabama, was founded in 1991. The company specializes in solutions for leveraging information and communications in computer networks. TAC Systems' product line includes data storage peripherals and software that optimizes network information access, retrieval, and transmission. Contact: Candice Dunaway TAC Systems, Inc. at (205) 721-1976, or e-mail cdunaway@tacsystems.com, or www.tacsystems.com

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The Week in Stocks

INDUSTRY ALMANAC

Premenos profitable in Q2

Premenos Technology Corp. (NASDAQ: PRMO), a small player among companies bringing electronic data interchange (EDI) to the Internet, this quarter turned a slight profit for the first time, joining larger players that are making money from this growing business, analysts say.

The Concord, Calif.-based company turned business around, earning $516,000, or 4 cents per share, for the second quarter. That compares with a net loss of $1.3 million for the same period last year.

The company's stock closed Thursday at 12 1/2 points.

Premenos makes Templar Electronic Data Interchange, EDI translation and mapping software. Larger players in the EDI field include Sterling Commerce, Inc. (NYSE: SE), which had its initial public offering 18 months ago, General Electric Information Services and IBM.

"I am still very bullish on the group," says Robert M. Johnson, senior vice president at ABN AMRO/Chicago Corp.

Overall, analysts estimate the market for EDI over the Internet will grow by 30% per year and increase from $1 billion to $2.5 billion by 2000.

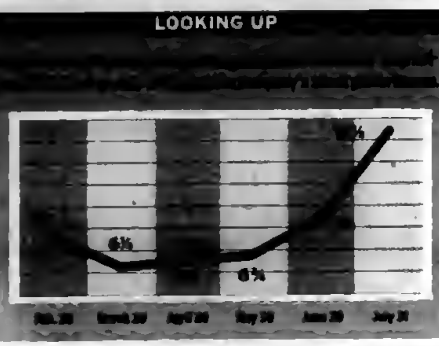
"I think the growth rate of 25% to 30% minimum is definitely there for these companies," says Kevin Krishna, an analyst at Laidlaw Equities in New York. "Now it's in the early growth stage." Sterling's service sales are growing almost 40% per year.

Although EDI has been around for about 25 years, use of private lines to provide the service often made it too expensive for small and midsize companies. With the rise in Internet use, the service is filtering below Fortune 500 companies.

"Now, with the internet, you don't have to pay $14,000 a month for leased lines," Krishna says. "Now, with $500 a month, you can do electronic commerce with your supplier."

— Kim Girard

LOOKING UP



Ebcn	52-Week	Range		Aug. 1 1997	We Net Change	We Pct Change
COMS	41 1/4	24 00	3 COM Corp	34 63	2 31	4 1
AIT	71 75	49 63	AMERITECH Corp	68 63	-0 44	-0 7
BSMD	80 25	16 17	Ascend Communications	57 50	1 88	7 0
T	62 63	30 75	AT & T	38 38	0 75	2 1
BNYN	8 88	1 19	Banyan Systems Inc	2 00	-0 44	17 9
BAY	34 00	15 50	Bay Networks Inc	30 38	-0 94	3 0
BEL	78 25	53 13	Bell Atlantic Corp	71 00	0 38	0 3
BLS	48 69	35 25	Bellsouth Corp	44 69	0 25	0 5
BRKT	42 25	9 25	Broadcast Technology	19 50	-0 75	2 3
CS	46 50	27 50	Cabletron Systems	34 25	0 94	2 8
CGRN	17 50	8 63	Centigram Communications	12 13	0 38	3 2
CSCO	80 94	45 25	Cisco Systems Inc	78 94	-0 69	-0 9
CMNT	7 00	1 31	Computer Network Tech (L)	5 75	-0 06	1 0
DIGI	33 13	12 81	DSC Communications	25 44	2 03	7 4
FORE	43 81	10 00	FORE Systems Inc	16 08	1 88	11 5
GDC	12 50	6 13	General Datacomm Inds	6 88	-0 50	-6 8
GSX	53 00	16 13	General Signal Networks	49 11	1 00	2 1
GTE	69 38	37 75	GTE Corp	45 94	0 19	0 4
LU	80 75	15 63	Lucent Tech	83 00	-0 94	1 1
MADGF	16 13	6 50	Madge Networks NV	8 00	-0 25	4 0
MCIC	43 38	33 25	MCI Communications Corp	34 19	-0 10	-0 5
NETM	11 13	2 50	NetManage Inc	5 50	0 38	12 0
NTRX	8 50	1 44	Netrix Corp	3 25	-0 13	5 3
NCDI	16 25	3 11	Network Computing Devices	8 75	-0 38	4 1
NWK	20 88	11 13	Network Equipment Tech	19 50	0 31	1 8
NETG	30 25	11 11	Network General	16 00	0 00	4 5
NN	52 00	31 00	Newbridge Networks Corp	38 75	-0 31	-0 8
NT	107 19	66 75	Nortel Telecom Ltd	102 81	1 00	1 0
NOVL	13 00	6 25	Novell Inc	7 50	0 44	6 2
NYN	39 50	31 38	Nynex Corp	54 81	0 31	0 6
OCTI	31 75	13 50	Octel Communications Corp	30 31	0 00	0 0
ODSI	24 25	9 75	Optical Data Systems Inc	11 75	-0 25	2 2
PCTL	39 75	8 23	Pictortel Corp	10 38	0 72	7 4
PTON	4 25	1 31	Proteon Inc	1 75	0 00	0 0
RACO	6 76	1 50	Racotek Inc (L)	1 63	0 00	0 0
RETK	9 25	3 18	Retix	4 13	-0 31	7 0
SBC	62 25	46 00	SBC Communications	58 56	0 19	0 3
SFA	23 30	12 50	Scientific Atlanta Inc	20 00	-0 75	3 2
SHVA	11 50	8 25	Shiva Corp	10 75	-0 13	1 1
FON	52 75	35 13	Sprint Corp	47 94	1 81	3 8
SMSC	15 25	8 25	Standard Microsystems Corp	12 38	-0 06	-0 5
USW	39 44	27 25	US West Inc	36 13	-0 88	2 4
XCOM	11 13	7 38	Xircom	11 00	0 00	0 0
XYLN	30 38	12 38	Xylan Corp	18 00	-0 31	1 6
AAPL	21 75	13 75	Apple Computer Inc	13 13	1 63	9 8
ASTA	6 38	3 94	3D3 Research Inc	5 13	-0 13	2 4
CPQ	57 19	20 50	Compaq Computer Corp (H)	57 19	2 36	4 5
DELL	80 75	13 13	Dell Computer Corp (H)	34 38	2 63	3 2
GTW	46 25	18 88	Gateway 2000 Inc (H)	38 63	2 00	4 9
HWP	70 88	39 75	Hewlett Packard Co	69 00	1 25	1 9
MUEI	27 38	13 50	Micron International Inc	18 75	0 25	1 4
NIPNY	74 00	31 94	NEC America	72 75	1 75	2 5
SGI	28 38	12 63	Silicon Graphics	24 69	-0 50	-2 2
SUNW	47 00	25 38	Sun Microsystems Inc	44 88	2 50	4 8
AMH	14 00	8 13	Amteche Corp	11 81	1 75	17 4
DGN	33 38	9 88	Data General Corp (H)	29 81	1 00	3 2
DEC	42 94	25 00	Digital Equipment Corp (H)	30 94	1 31	3 1
IBM	108 44	53 38	IBM (H)	194 31	-2 19	2 1
MDCD	8 75	2 88	Memorex Data Inc	4 13	0 00	1 5
NETF	4 38	0 58	Netframe	0 69	0 00	0 0
PRCM	10 13	9 50	PrinCom Technology Inc	10 00	-0 50	5 3
SQNT	89 31	18 73	Sequent Computer Sys (H)	29 31	2 19	8 1
TEXN	1 88	2 38	Sequoia Systems Inc	3 38	0 25	9 1
SRA	36 75	17 25	Stratus Computer Inc	53 75	4 56	8 8
TDMI	29 56	10 25	Tandem Computers Inc (H)	89 50	1 75	8 5
UIS	30 19	3 75	Unisys Corp (H)	10 19	1 25	14 0
ADBE	49 88	39 63	Adobe Systems Inc	37 31	-0 94	-2 5
AMSWA	8 94	3 75	American Software Inc	8 94	3 81	25 4
APLN	40 00	3 13	Aplix Inc	3 88	-0 25	-6 1
ARSW	50 50	17 38	Arbor Software	43 00	0 13	0 3
ADSK	42 38	18 50	Autodesk Inc	41 38	0 50	0 9
BGSS	32 50	20 73	BGS Systems Inc	27 38	0 00	0 0
BMCS	62 38	29 38	BMC Software Inc	60 38	2 38	4 1
BOOL	17 50	15 63	Books and Babbage	17 00	0 75	2 8
BORL	9 13	4 73	Borland Int'l Inc	8 13	0 81	11 1
BOBY	26 50	6 75	Business Objects (L)	8 38	-0 63	-8 3
CAYN	4 25	2 44	Cayenne Software Inc	2 56	-0 19	-6 8
CNTR	5 88	1 13	Centura Software	2 00	0 75	14 3
CHKPF	56 25	15 75	Checkpoint Software Technologies	36 75	1 00	3 6
COGNF	50 38	19 75	Cognos Inc	29 63	1 13	4 0
Co	70 00	17 25	Computer Associates	66 94	-0 94	1 4
CYN	10 50	3 13	Computervision Corp	3 69	-0 11	-6 9
CPWR	63 25	18 13	Computware Corp (H)	60 63	1 00	1 7
CSRE	34 00	8 69	Compuware Inc	8 00	2 50	32 8
COSFF	10 75	5 00	Corel Corp	6 00	0 00	0 0
DWTI	6 63	2 25	Datawatch Technologies Inc	3 25	-0 13	3 7
FILE	56 50	9 38	Filenet Corp	17 63	1 13	6 8
FRTE	45 00	7 25	Forte Software	11 00	0 00	0 0
FTPS	8 50	3 50	FTP Software Inc (L)	5 81	0 13	3 4
HUMCY	38 50	22 00	Hummingbird Comm Ltd	37 88	1 13	3 1
HYSW	28 75	11 38	Hyperion Software Corp	26 63	0 13	0 5
IRIC	10 50	3 13	Information Resources	10 38	1 94	13 4
IFMX	11 13	6 56	Informix Corp	10 63	-0 81	7 1
INGR	12 63	3 25	Intergraph Corp	9 88	1 50	16 0
LEAF	4 73	0 81	Intuit Leaf Inc	2 81	0 25	9 8
ISLI	14 63	9 75	Intersolv Inc	12 63	-0 50	-3 8
INTU	41 88	20 88	Intuit Inc	25 00	1 13	4 6
TLC	28 75	5 50	Learning Co (The)	13 00	2 50	23 7
LGWR	11 75	4 13	Logic Works	9 00	1 88	22 0
MAPS	13 00	7 50	Mapinfo Corp	12 00	0 00	0 0
MATH	2 63	2 19	MathSoft	2 25	-0 38	09 3
MCAF	78 50	31 75	McAfee Associates	65 25	-0 88	-3 4
MENT	18 50	6 38	Mentor Graphics	10 88	0 69	7 0
MIPGY	33 38	10 50	Micro Focus	26 50	-0 50	1 9
MGII	13 75	8 00	Micrografx Inc	7 38	0 44	0 0
MSFT	150 75	50 13	Microsoft Corp	140 75	7 00	0 7
ORCL	39 00	33 63	Oracle Corp	34 56	-0 88	1 6
PMTC	64 25	37 25	Parametric Technology	46 88	1 81	3 8
PARQ	5 38	0 88	Parc Place Systems Inc	1 13	0 00	0 0
PSFT	88 38	30 83	Peoplesoft	58 50	0 44	0 8
PTEC	19 75	11 00	Phoenix Technologies	13 00	-0 75	-5 5
PSQL	13 75	6 50	Platinum Software	11 25	1 38	4 5
PLAT	17 88	9 75	Platinum Technology	11 25	0 31	2 1
PRGS	13 00	12 13	Progress Software Corp	16 13	-0 13	-0 8
RMBO	22 13	15 73	Rainbow Technologies Inc	18 63	-0 69	-3
REDB	10 75	3 50	Red Brick Systems Inc	7 50	-0 50	-6 2
BOSS	9 75	1 75	Boss Systems, Inc	4 25	-0 00	-3 4
SAPE	111 75	30 00	Sapient Corp	55 25	0 00	0 0
SCOC	8 63	3 13	SCO Inc	4 38	-0 00	2 5
SDTI	44 38	21 38	Security Dynamics Tech	41 88	0 75	1 9
SOTA	10 25	8 88	State of the Art	12 38	-0 63	-4 8
SSW	78 88	27 25	Systemic Software Inc	33 81	-0 00	-0 2
SDRC	69 13	16 75	Structr Dynamics Research	37 13	-0 38	1 4
SYBS	21 13	12 13	Symbix Inc	14 69	0 00	0 0
SYMC	24 50	9 75	Symantec Corp (H)	14 38	5 13	14 0
SNPS	50 50	21 75	SynOpsys	33 88	2 13	8 7
SSAX	14 22	3 88	System Software Assoc	8 88	-0 28	-3 1
SYSF	36 38	3 50	Systemsoft Corp	13 63	0 13	0 9
TRUV	7 38	1 38	Truevision Corp	1 50	-0 13	-6 3
VIEW	17 50	0 50	Viewlogic Systems	16 75	-0 06	-0 4
VMSW	10 00	0 50	Vmark Software Inc	9 13	0 50	3 8
WALR	16 25	10 38	Walker Interactive Systems	14 69	-0 38	1 3
WALL	89 13	12 25	Wall Data Inc	17 75	0 06	0 4
WANG	24 00	16 50	Wang Laboratories Inc	19 81	-2 75	12 2
AMZN	80 38	13 75	Amazon.com	17 13	1 50	3 7
AOL	74 38	22 38	America On-Line	68 88	4 88	7 5
ATHM	25 50	16 63	At Home Corp	16 50	-0 75	-3 7
BBN	29 38	13 13	BBN Corp	38 94	0 13	0 4
CSRV	18 75	8 63	Computerserve Corp	11 44	-0 44	-3 7
EDFY	26 25	9 50	Edify Corp	13 88	-2 63	15 9
XCI	21 63	9 50	Excite, Inc.	18 13	0 50	3 2
SEEK	11 88	4 38	Infoseek Corp	5 75	-0 50	-8 0
LCOS	33 75	5 75	Lycos Inc	17 75	0 50	2 9
NETC	24 25	7 88	Netcom On-Line	14 75	0 31	2 2
NSCP	69 50	25 50	Netscape Comm. Corp	57 63	1 63	4 5
OIBKT	25 50	6 38	Open Market Inc	10 50	1 38	4 7
PSIX	14 38	5 50	PSINet	8 63	0 31	1 5
QDEK	9 38	2 50	Quadramed Corp	2 72	-0 03	-1 1
RAFT	25 75	8 88	Raptor Systems	32 13	-0 51	3 3
SCUR	16 25	4 75	Secure Computing Corp	5 63	-0 69	10 9
SPYG	20 25	8 00	Spyglass Inc.	3 38	-0 25	3 1
YHOO	33 38	16 25	Yahoo! Inc. (H)	54 75	3 75	16 5
AMD	48 50	31 75	Advanced Micro Devices	36 81	1 25	3 3
ADI	53 88	34 63	Analog Devices Inc.	81 50	0 35	0 8
CHPS	26 50	2 38	Chips and Technologies	16 94	3 75	09 4
CRUS	24 25	8 00	Cirrus Logic	15 38	0 73	3 5
CY	16 94	9 75	Cypress Semiconductor Corp	13 75	1 38	8 2
CYRIX	69 00	31 00	Cyrix	23 25	4 13	19 5
INTC	83 15	36 63	Intel Corp (H)	83 25	3 25	3 8
LSCC	38 44	25 88	Lattice Semiconductor	68 23	4 13	6 4
LSI	46 88	09 75	LSI Logic Corp	32 00	0 38	1 2
MCRI	20 63	15 00	Micrel Semiconductor Inc. (H)	65 38	0 63	1 0
MU	49 94	18 38	Micron Technology	49 50	4 19	9 3
MOT	80 50	44 13	Motorola Inc	79 94	0 38	0 5
NAM	37 50	13 75	National Semiconductor	31 38	-2 00	-6 0
TXN	109 50	69 38	Texas Instruments	119 13	3 13	3 3
VLSI	37 13	11 75	VLSI Technology	31 13	2 38	8 3
XLNX	56 50	09 25	Xilinx	80 44	6 81	1 7
ZLG	09 50	16 00	Zilog Inc.	34 19	0 00	0 0
ADPT	46 88	30 38	Adaptec Inc	42 00	-0 88	-2 0
APCC	31 38	11 38	American Power Conversion	25 13	0 13	0 5
CREAF	35 25	9 38	Creative Technology Ltd (H)	20 88	-3 38	-14 3
RACZ	24 50	3 00	Data Race Inc	9 81	-0 25	-2 5
DTM	12 00	5 38	Datatec Corp	10 25	0 50	5 1
EMC	51 50	18 88	EMC Corp (H)	49 81	0 81	1 7
EMLX	21 38	13 88	Emulex Corp	15 63	1 88	0 6
ESCC	09 75	20 00	Essex and Sutherland	28 63	1 38	5 0
EXBT	17 38	8 38	Exabyte	11 25	0 00	0 0
HSLF	8 50	1 75	Interleaf Inno. Systems (L)	3 56	0 03	3 4
IOM	27 00	12 00	Iomega Corp	22 13	0 13	0 6
IPLS	2 88	0 56	IPL Systems Inc.	1 88	0 00	10 0
KMAG	56 75	15 38	Komag Inc.	23 00	2 06	10 3
MTSI	80 38	12 88	Micro Touch Systems Inc. (H)	27 63	-0 88	-3 1
MTNC	6 38	3 38	MTI Technology Corp. (H)	5 94	-0 06	1 0
PMCS	8 75	0 59	Pinnacle Micro Inc.	0 88	-0 25	09 2
AQW	8 38	2 38	QMS Inc	3 13	0 00	0 0
QNTM	09 94	6 00	Quantum Corp (H)	29 06	0 81	1 1
RDUS	2 38	0 19	Radius Inc.	0 41	0 08	18 2
SEG	56 25	22 88	Seagate Technology	40 88	0 25	0 6
SCIS	19 63	8 75	Storage Computer Corp.	11 75	0 38	3 3
STK	54 00	32 63	Storage Technology	50 38	0 44	0 9
TEN	56 25	37 38	Tencor Inst Inc	51 94	1 56	2 5
WDC	44 50	34 00	Western Digital Corp	38 13	0 44	1 1
XIRC	84 00	44 63	Xircom Corp	81 44	0 50	0 6
AMSY	57 13	15 75	American Mgmt Systems	25 38	-0 50	-2 1
ANLY	39 75	13 88	Analysts Int'l (H)	38 75	-0 75	1 9
AUU	50 44	08 00	Auto Data Processing	48 88	0 13	0 3
BDMI	30 75	19 75	BDM International Inc.	25 75	0 00	0 0
CATP	38 38	21 25	Cambridge Tech. Partners	37 38	1 00	2 8
CEN	85 13	29 38	Compuware Corp	42 88	0 88	2 1
CDO	29 44	18 88	Comdisco Inc.	27 75	1 38	4 7
CPU	32 88	15 25	CompUSA Inc.	25 88	-1 50	-5 5
CHRZ	69 63	12 88	Computer Horizons	40 25	1 75	4 5
CSC	88 38	57 88	Computer Sciences	20 19	1 38	2 4
TSK	49 88	13 88	Computer Task Group	43 75	2 00	4 8
CDAS	08 63	12 75	Computer Data Systems Inc.	08 13	0 00	0 0
EGGS	8 38	3 63	Egghead Discount Software	6 25	1 88	28 0
EDS	65 38	31 75	Electronic Data Systems Corp.	44 19	-0 88	-1 6
INAC	40 88	10 75	Ingram Corp	32 88	-0 75	-2 5
INEL	10 75	2 25	Intelligent Electronics	2 81	0 00	2 3
KEA	78 00	18 00	Keane Inc.	59 75	-2 38	-3 5
MICA	09 50	12 25	Micronetics Inc.	21 38	3 13	4 8
PAYX	42 38	25 63	Paychex	39 69	0 38	0 5
PMS	09 25	33 13	Policy Management Sys. (H)	53 75	3 00	5 9
REY	20 88	13 75	Reynolds and Reynolds	19 00	0 13	0 7
SCBI	27 88	16 00	SCB Computer Tech. Inc.	24 25	-0 25	-1 0
SEIC	39 75	18 75	SEI Corp.	09 10	0 75	2 8
SMED	48 75	36 75	Shared Medical Systems	34 13	2 75	8 6
SSPE	33 50	08 50	Software Spectrum Inc.	14 00	0 75	5 7
SDS	54 25	32 00	Sungard Data Systems	38 44	0 00	0 0
VSTY	09 75	0 50	Vanstar Corp	38 13	0 50	4 5

KEY: (H) = New annual high reached in period (L) = New annual low reached in period

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Outsource to cut Web costs

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a way to cut costs and tap in to the expertise and facilities of full-time electronic-commerce experts. "If somebody can do this better and cheaper and allow us to focus on our core competencies — which is to allow us to provide premium transportation services to our customers — then that's what we're going to do," said Dave Edmonds, a vice president at Caliber in Akron, Ohio.

"If you want to [create] an electronic-commerce site, and you add together the cost of personnel, marketing, Internet connectivity, hardware, software and management, you can't get a good site up for less than one hundred or two hundred grand," said Chris Stevens, an analyst at Aberdeen Group, Inc. in Boston. "If it's not part of your core business, it might make sense to hire someone else to do it."

Caliber, a $a.5 billion company, last week announced a deal worth $8 million to $15 million over five years, in which Sterling Commerce, Inc. will manage Caliber's electronic data interchange (EDI) network.

Dublin, Ohio-based Sterling will provide translation services and help desk staff. It will maintain the network and hire staffers from Caliber's 250-person information systems department to do the job.

RISKY BUSINESS

But many experts and users still consider outsourcing a risky proposition for electronic commerce. The technology changes fast, which makes it difficult for companies to write reasonable contracts for outsourcing vendors.

And some companies see electronic commerce as a strategic technology they want to learn about and control — an opportunity that will be denied them if they outsource.

Chris Sagovac, a senior programmer/analyst at American Credit Indemnity Co. in Baltimore, said his company wanted to retain control of its Web site, where companies can go to obtain insurance for accounts receivable. "This is a strategic move to keep the expertise in-house," he said. "And when you're doing it yourself and not relying on someone else, response time is bound to be quicker."

Tips for outsourcing E-commerce

- Be careful about writing specifications in contracts — technology changes fast.
- Manage relationships with vendors closely.
- Keep a small number of relationships.
- Consider partially outsourcing E-commerce, hiring out simple maintenance and keeping the rest in-house.

As a compromise, companies sometimes outsource what they consider basic infrastructure services and retain control of more complicated technologies they view as strategic.

National Semiconductor Corp. in Santa Clara, Calif., controls the writing of applications, the user interface, content and customer service. The company outsources Web maintenance to Exodus. "It would have been a lot more expensive to run it in our office," said Clay Shope, operations manager at National Semiconductor. The company pays about $5,000 per month to run its Web site at Exodus, which has round-the-clock staffing and a 10M bit/sec. Internet connection. Developing the service in-house would have cost about $100,000 per year for staffing, plus another $100,000 for Internet connectivity.

Meanwhile, vendors are moving in with outsourcing services for electronic commerce.

Exodus officials last week said the firm will open data centers in Seattle, Los Angeles and Washington by Sept. 15 for hosting corporate Web sites. Exodus also has a data center at its headquarters in Santa Clara, Calif.

GEIS today will announce upgrades to TradeWeb, its EDI-based network of companies buying and selling business-to-business goods and services on the Web. The update adds internationalization features, including currency conversion, local taxes and the ability to automatically check transactions for violations of local law, currency conversion. The upgrades are available immediately. □

Users bemoan threat to cross-platform Java

CONTINUED FROM PAGE 1

to throw a roadblock at Java.

"As a Java programmer, I am being forced to make choices and will have to do more work because Microsoft refuses to ship [Java Foundation Classes] on [Internet Explorer] or Windows," complained Charles Kerr, a programmer/analyst at OAO Corp. in Oklahoma City. "They could bundle the [graphical user interface] components in over lunch, because they're written in straight Java."

PERCEIVED THREAT

Like the Tyrannosaurus rex protecting its turf in *The Lost World: Jurassic Park*, Microsoft executives raised their guard against the perceived threat posed by Sun's Java Foundation Classes (JFC). Microsoft views the libraries of reusable code as a competing operating system that will bloat Windows.

But Sun and cross-platform Java devotees dispute those operating systems claims. The class libraries are no more than 1.5M bytes, Sun officials said. By contrast, Windows 95's recommended memory requirement is 16M bytes. The JFCs are merely an "interface layer to the operating system," said Jon Kannegaard, a vice president at Sun's JavaSoft division.

> **"The real meaning of this is that Microsoft doesn't really stand behind Java. There were always questions of how much of Microsoft's acceptance of Java was for real."**
> **– Motti Goldberg, US West**

"It would have to be a tremendous amount of classes to get it to a level of functionality that is anywhere near that of an operating system," said Patrick Connolly, vice president of the Investors Edge business group at Neural Applications Corp. Connolly's unit uses software that analyzes stock market data.

Kannegaard said he was surprised by Microsoft's hard-line stance given that JavaSoft executives recently met with Microsoft officials to discuss contractual issues.

Many developers see the merit in Microsoft's worries and its mother-hen reaction.

But they said they are afraid the Redmond, Wash., software giant will slow down and perhaps even kill Java's progress as a cross-platform language.

"The real meaning of this is that Microsoft doesn't really stand behind Java," said Motti Goldberg, chief architect at US West, Inc., which plans to deploy cross-platform Java applications in the future. "There were always questions of how much of Microsoft's acceptance of Java was for real."

Goldberg said modern languages all come with class libraries, which in the case of the JFCs, can be used to build components such as tool bars and buttons or to access services such as drag-and-drop and keyboard navigation capabilities.

FIGHTING BACK

Microsoft senior executives two weeks ago launched an offensive against the Java class libraries, claiming they aren't legally required to ship the class libraries with their Internet Explorer browser.

Charging that Java really doesn't run cross-platform, they said the "Java language" should be distinguished from Java "class libraries" that ship with the virtual machine.

"Sun officials have been predicting that Microsoft will ship JFC someday. I assign this exactly the same probability as Sun shipping Windows NT," said Cornelius Willis, Microsoft's director of platform marketing.

Microsoft offers its own Application Foundation Classes as an alternative to the JFCs and tells developers to use J/Direct to gain access to Windows application programming interfaces (API) without using Java APIs.

But developers such as Dave Moffat at SAS Institute, Inc. in Cary, N.C., have been waiting for the JFCs to write user interfaces for applications. SAS chose Java for its cross-platform promise, he said.

If Microsoft doesn't ship the JFCs, Moffat said, he would have to write one version of the applications for Windows and another for Macintosh, Unix and other operating systems. "Or I have to make [the application] sit there while it downloads," he said.

Moffat said he thinks Java's cross-platform problems are being ironed out. "This is just part of Microsoft's disinformation strategy, and they're trying to make it a self-fulfilling prophecy," he said.

But some users said Microsoft is right to optimize Java for Windows because it is the predominant platform.

"It's killing Java as a cross-platform operating system, but it's good for Java as a language," said Scot Wingo, co-founder of Stingray Software, Inc. in Morrisville, N.C.

"Microsoft is simply trying to position itself better," said William Stewart, co-webmaster at the Chicago Board of Trade. "If Microsoft has better ideas, they should use them. Who says Sun has all the answers?" □

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COMMENTARY

Microsoft song and dance masks real sore points

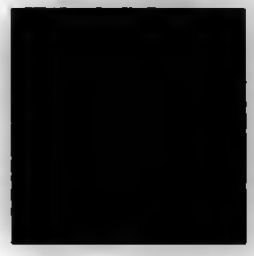
David Coursey

It's an interesting ritual: Microsoft executives promoting pessimism, talking about what could go wrong. "Maybe the market is saturated." "Maybe we'll have to invest more than we expect." "Someday we'll have to make good on all those employee stock options we've handed out." "Low-end devices require a big investment." "R&D spending is increasing rapidly."

It's a surreal experience, listening to Bill Gates, Steve Ballmer and the rest of the boys at Microsoft's annual financial analysts' briefing do their best to explain all those looming disasters.

The briefing was held two weeks ago in Seattle. It was, if not a joke, at least a game played more for ritual than substance. Implicit in the cautious forecasts is the winking disclaimer, "We're not really serious. Things look darn good."

Microsoft knows it's talking about things that *might* happen, rather than things that *will* happen. Wall Street knows it, too. So Microsoft sells pessimism for a few minutes during its futuristic show-and-tell. And the analysts write their rosy predications, adding the occasional Microsoft-supplied caveat, just in case.



Given as I am to raining on people's parades, I'd like to suggest some things Microsoft *should* be worried about but that executives mentioned only in passing or not at all:

Product quality. While Bill and the boys (they're almost all boys, anyway) were talking about the wonders of natural-language interfaces, I was asking attendees how often their systems crash. The best advice from the power users was: Wipe your disk, reinstall Windows 95 every 90 days, and you'll be fine. Otherwise, a heavily used system tends to become unstable over time — mostly because of new software installations. Microsoft says it's putting huge resources into these issues. But to me, it looks like Priority 1 is slapping an Internet user interface on everything, not fixing the code underneath. Windows 95 just isn't stable enough.

Thin clients. Microsoft worries about thin clients. That's why it has so many initiatives aimed at the heart of the network computer.

Customers should remember that Microsoft never strays far from the critical path. That's reason enough to wonder what will happen if the network computer dies. Will Microsoft follow through on projects that helped kill it? It's also reason to wonder what will happen if Microsoft vanquishes JavaSoft.

Antitrust. The monopoly issue still hangs over Microsoft's head, though allowing the company full reign over desktop computing seems to have become accepted public policy. Gates says he wonders why people are calling Microsoft a media company when media is such a small part of its business. But as Microsoft reaches out to TV, Web broadcasting and other new media, I think the government will take another look. But it may be 2002 before that happens.

NT questions. Windows NT still isn't an enterprise operating system. Microsoft scalability demonstrations notwithstanding. I consistently hear from customers that NT is a small-business or departmental solution.

Should investors dump their Microsoft shares because of these issues? If I had any, I wouldn't. But however rosy the company's future may seem, even Microsoft faces questions. You just have to know what to ask. □

Coursey, an analyst and consultant, is editor of "coursey.com," an online newsletter available at www.coursey.com. His E-mail address is david@coursey.com.

Year 2000: a regular laff riot

Frank Hayes

It's official: The year 2000 problem is now mainstream. We know that because humorist Dave Barry made fun of it last week. (Dave's recommended solution: Hire Skip, the handyman who fixed Dave's leaky roof. Skip fixed that in a few hours, and for a very reasonable price. So why not the Millennium Bug, too?)

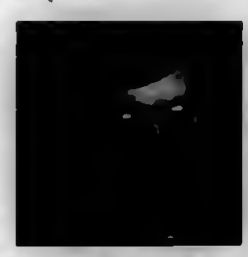
So does that mean the year 2000 hangup is so well understood that we can all laugh about it now?

Yeah, right.

What this newfound mainstream popularity actually means is pure misery for year 2000-weary IS shops. It marks the beginning of an onslaught of publicity that will trot out every imaginable piece of millennial misinformation — and in the process vilify just about everyone, living or dead, who has ever created a computer system.

Sure, *Computerworld* and other IS publications have been writing about the year 2000 problem. Business weeklies have printed their cover stories. Airline in-flight magazines have run their articles.

But that's just the tip of the media iceberg that's coming into range for this IT *Titanic*. And as mainstream media endlessly rediscover the year 2000 story, the amount of oversimplification and uninformed opinion will rise exponentially — as common sense vanishes.



Are government agencies running late with fixes for their year 2000 problems? That makes it a political problem, with all the usual pontification and pulpit-pounding from politicians and pundits.

Cranky newspaper columnists and TV commentators who can't get a three-year renewal on their credit cards or their driver's licenses will add their voices to the din. So will young reporters who don't know the first thing about databases or systems development, but who know the editor wants a story about how computers will collapse when 1999 turns into 2000.

In the next two years or so, you'll read plenty about wild accusations, conspiracy theories and quack cures.

And yes, it will get personal. You'll hear your IS predecessors being called nitwits for having created the problem. And you'll hear yourself being called a numbskull for not having fixed it already.

OPEN SEASON

IS shops will be the target for every irresponsible, irrational idiot who discovers the year 2000 problem and knows how to get his opinion or theory to a newspaper, magazine, newsletter or radio or TV station.

You'll be blamed. You'll be pilloried. You'll be slandered. You'll be hanged in effigy.

And although most of the clueless cranks whaling away at you won't have any idea what they're talking about, you'll still have to march up to the executive suite again and again, as wave after wave of misinformation washes through.

This time you won't be explaining what needs to be done or why it's urgent. No, this time you'll explain that, yes, you remembered to fix the data. And the applications. And the operating systems. And the PCs. You'll debunk one crackpot year 2000 idea after another as they're endlessly repeated and begin to worry even your most placid executives.

You'll repeat over and over that there's no one to sue, that it isn't an IBM or Microsoft plot, that the problem wouldn't go away with even the most liberal application of Java, the Internet and "convergence."

And all that, of course, is after you've actually fixed your year 2000 problems.

So if you thought Dave Barry's column was funny — well, so did I.

Now let's see how much longer we can keep laughing. □

Hayes is Computerworld's staff columnist. His Internet address is frank_hayes@cw.com.

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(AUGUST 1977)

- Headline: DP center bombings plague Italy
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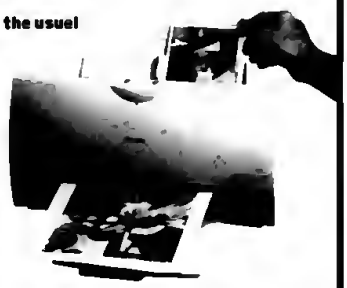

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Base: 6,300 World Wide Web users

Source: Survey.Net (www.survey.net) *

Legal brief

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Inside Lines

Trash talk

It was 20 years ago — Aug. 3, 1977 — that the Radio Shack division of Tandy isunched the first mass-market computer: the TRS-80 Model 1. Its specifications were an 8-bit, 1.77-MHz Z80 processor from Zilog Corp.; 4K bytes (not megabytes) of memory, expandable to a whopping 52K bytes; a monochrome monitor; and a cassette port for loading programs from tape. To keep prices low, Tandy buyers scored a load of cheap black-and-white monitors in gray plastic cases. They painted the computers to match and dubbed the look "Mercedes Gray." But when a customer's hands would rub the color off the keyboard, ingenious Radio Shack salesmen learned to restore the look in the back room with a spray can of General Motors primer gray.

SAP, Intel in E-commerce deal

German software maker SAP AG and chip maker Intel in Santa Clara, Calif., are hooking up to develop an electronic commerce system using the Internet. The two computing giants are expected to release details of the project Tuesday. The joint project is to develop ways to link suppliers to customers for electronic commerce transactions. An SAP official said the system is independent of any of SAP's R/3 development plans and will be an entirely new product. But he said the electronic-commerce piece will use business processes contained in R/3 and that can be tied back to R/3.

It's a Live

Storage Technology is preparing to announce a software tool called Live Attach that lets Windows NT servers send data directly to the Louisville, Colo., company's line of high-end tape storage libraries. StorageTek already offers a low-end tape library called the Timberwolf 9730 for Windows NT LANs. But with Windows NT data starting to play a more prominent part in business enterprise operations, users can connect directly to the high-end tape systems providing backup and restore to mainframes and Unix servers.

Let the litigation begin

The long-awaited flood of year 2000 legal problems has begun, and it's about . . . T-shirts! Dave Bettinger, who is a year 2000 project communications coordinator at mail-order retailer L. L. Bean, sells the shirts part time. He got most orders through a link with a year 2000 information site maintained by Canadian year 2000 guru Peter de Jager. According to Bettinger's home page, a Canadian firm has obtained a Canadian trademark on the year 2000 and claimed that the link from de Jager's site to the T-shirt offer is a violation of Canadian trademark law. When the Canadian firm threatened to file suit, Bettinger cut the link — and T-shirt orders fell 90% within three days.

It's all French to us

Oh, those romantic French. The Paris newspaper *La Tribune* scored an interview with Oracle CEO Larry Ellison last week in which Ellison confirmed he will join Apple's board and assured everyone that Steve Jobs would officially take the reins at the company (see related story, page 28). But the real fun was in the paper's over-the-top writing style. *La Tribune*'s headline blared, "Larry Ellison is ready to save Apple." The article said Ellison "was completely at ease in the calm of his Japanese home" and went on to say that Ellison spilled the beans "with a devilish grin."

Bay serves up remote access

A Bay Networks source said the Santa Clara, Calif., vendor next week will announce a smaller version of its high-end MSX-5000 remote access server for users, carriers and Internet service providers.

And finally, a little 'net-derived humor to brighten your day, courtesy of one of our alert readers. This is the proposed dictionary definition of Windows 95: noun. 32-bit extensions and a graphical shell for a 16-bit patch to an 8-bit operating system originally coded for a 4-bit microprocessor, written by a 2-bit company that can't stand 1 bit of competition. Send your humorous items to news editor Patricia Keefe at (508) 820-8183 or patricia_keefe@cw.com.

The Back Page

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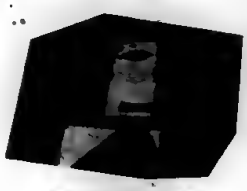
Dispatches & Images from the fringes of the Internet frontier

Inside Lines

Digital archives



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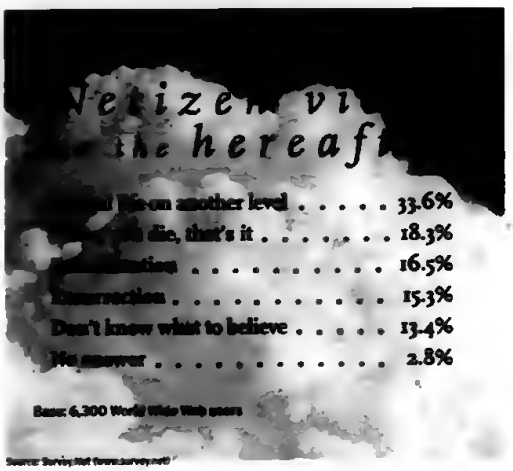
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The same IBM RS/6000® technology that as "Deep Blue" competed against world chess champion Garry Kasparov is also conquering deep space. For the Mars Pathfinder mission, NASA and Lockheed Martin had only one shot at success. Their solution: an onboard flight computer based on ever-reliable and powerful RS/6000 technology.

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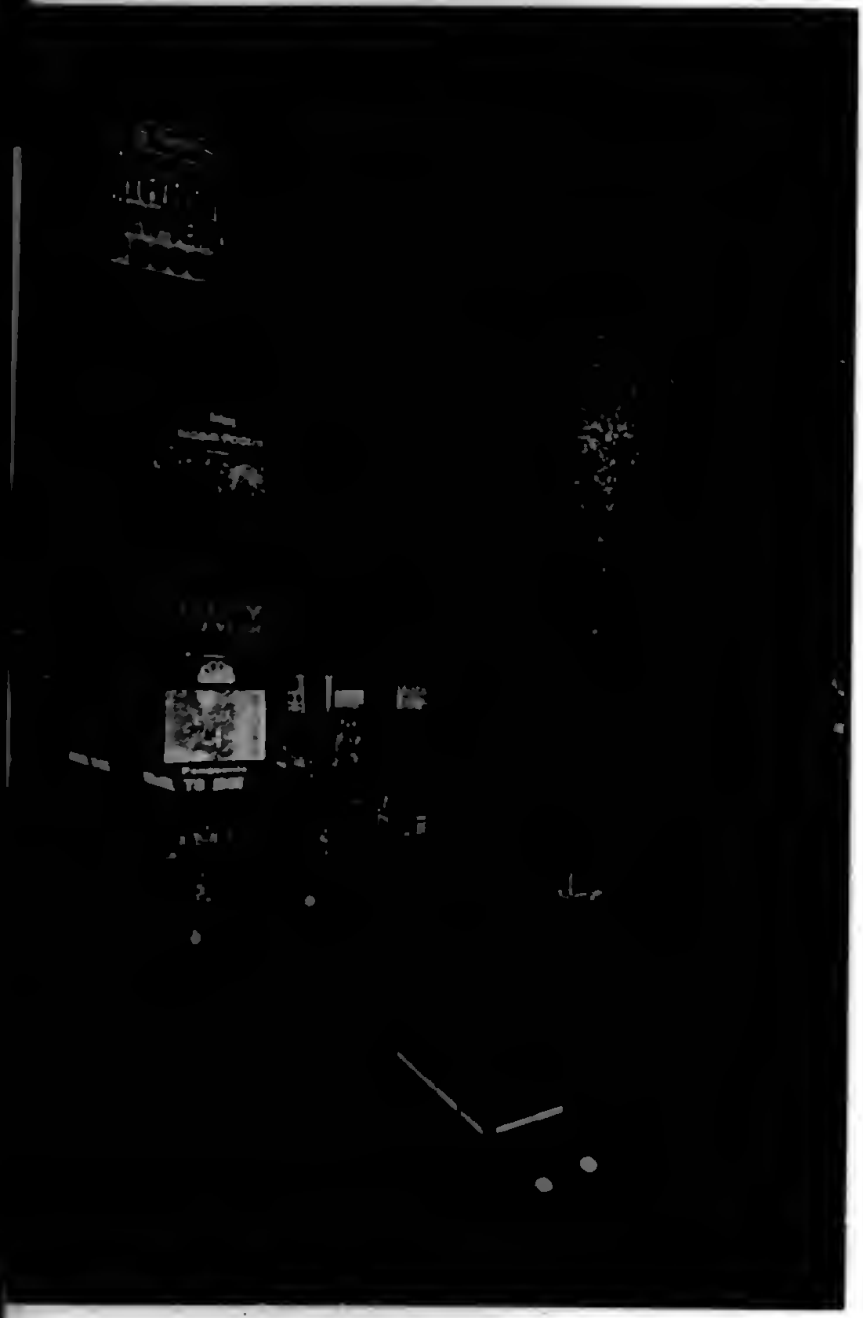

SAS® software didn't drop the ball.

While other software companies scramble to help you adapt your programs to handle the Year 2000 crisis, SAS Institute has just one question: *What* crisis? SAS software solutions—from data warehousing to data mining, OLAP to applied analysis—are ready to handle dates through the year 20,000 AD. And you can easily change the interpretation of two-digit years to the 100-year span of your choice.

SAS software customers won't need to shell out the estimated $3-$4 million it will cost the average company to address the Year 2000 issue. So isn't it time you invested in the world's best decision support solutions? From a vendor that will keep you on the leading edge of technology into the new millennium—and beyond? Just visit us at www.sas.com/y2k/ or call 919-677-8200.

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